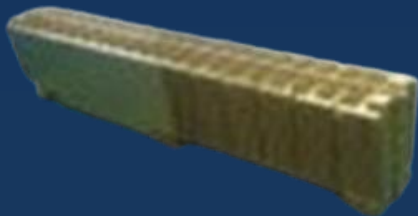


# Centum Electronics Limited

Innovate, Integrate & Elevate- Poised for Healthy growth

Defence electronics



Choice Equity Broking Private Ltd.

## Centum Electronics Limited

Innovate, Integrate & Elevate- Poised for Healthy growth

Defence electronics

February 2024

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## Centum electronics

## OUTPERFORM

### Innovate, Integrate & Elevate- Poised for Healthy growth

Founded in 1993, Centum Electronics Limited-(CEL) is one of the largest Electronics System Design and Manufacturing (ESDM) companies in India. Competencies across product design and manufacturing of complex and critical products and supplying to marquee customers in the most advanced economies as well as in India. Offering entire spectrum of design services and manufacturing of systems, subsystems for mission critical products in Defence, Space, Aerospace, Industrial, Transportation and Medical sectors. World-class design & manufacturing facilities across North America, Europe and India, with cutting edge infrastructure as well as a global supply chain capable of delivering products with high quality and reliability anywhere in the world.

**Restructuring of French subsidiary:** Revenue contribution from the French subsidiary is roughly around 40-45% on consol basis. To enhance the competitiveness of French and Canadian subsidiaries, company has strategically transferred most of the test bench activities to India over the past year. Leveraging Indian talent and cost advantages. **Furthermore, company have successfully completed the transfer of production of Canadian subsidiary's products to India, allowing for better margin realization. Management expect material benefit of restructuring to start reflecting from H2FY25. H2FY25. We expect margin on consol basis to improve from 8.8% in FY23 to 12.5% in FY26.**

**Focusing on BTS segment business:** Typical EMS industry works in BTP model where component suppliers gets final design from OEM and deliver the component post doing assembly/ integration and testing to the OEM as per specifications. Where in BTS where component supplier demonstrate their R&D capability and participate in various program from designing stage to manufacturing stage. In BTS segment margin for the business is comparatively better than BTP. Centum's current BTP share is around 39% and BTS share is around 29%. Company is working on various new program where it is bidding for BTS project from new and existing client from the sectors like Defence, Transport & Automotive, Industrial and Healthcare. **E.g. in automotive segment currently centum is providing BTP solution to Global Tier 1 auto player for electric vehicle powertrain electronics for e-buses which goes in to e-buses of TATA and Ashok, Further company is working with client to offer BTS solution in same segment. Due to its technical capability and trusted source of supply to DANA India centum is getting various enquiry from the clients for other vehicle categories like 3W,PV and 2W. We expect increasing penetration of EV India will provide healthy opportunity to grow going forward in medium to long term.**

**Rapidly growing Space technology opportunity :** Centum has established a credible track record since 2002 in this segment delivering complex products that address applications in launch vehicles, satellite payloads, satellite bus systems as well as ground equipment. Centum actively involved with ISRO in various stages of design, development, qualification and production of electronic modules, subsystems and systems for multiple applications in satellites and launch vehicles and It has delivered mission-critical electronics on almost all satellite programs of ISRO including the ambitious Chandryan-1,II,III, Mangalyaan, Aditya-L1 and Gaganyaan, and also delivered 300 to 500 components for almost every Indian space mission. Going forward, As space sector is opening up for India due to various policy reform and government focus to increase India's share in global Space sector from current 2% to 7% by 2030 bode well for the company like centum to reap the benefit. **Further, Privatization of small satellite launches (LEO) and ToT in SSLV technology to private players will FastTrack the satellites launches driven by increase in uses by Telecom and entertainment industry followed by Defence requirement. As centum is preferred supplier of mission critical component to ISRO for various launches, company is getting various enquiry from private players and startup to supply the components in upstream, midstream and downstream category.**

**View and Valuation:** We initiate coverage in centum electronics with outperform rating led by 1) Gradual improvement in France subsidiary's performance due to restructuring effort, 2) focus on high margin segment BTS solution and to offer one stop solution to various industry such as defence, aerospace, space, industrial, medical and communications industry, 3) prefer partner for clients like Space Application Centre, ISRO, Defence Research and Development Organization (DRDO), ABB, Thales, Rafale, and 4) Upcoming opportunity in SSLV launches. We expect CEL to registered a healthy revenue/EBIDTA/PAT growth of 25/42/100% CAGR over FY23-26 and RoCE expansion from ~7% in FY23 to ~25% in FY26. We ascribe a multiple of **35x on FY26E EPS** to arrive at a **TP of Rs.2,175** with a rating of "OUTPERFORM".

CMP (Rs)	1662
Target Price (Rs)	2175
Potential Upside (%)	31

\* CMP as on 02<sup>nd</sup> Feb 2024

### Company Info

BB Code	CTE IN EQUITY
ISIN	INE320B01020
Face Value (Rs.)	10
52 Week High (Rs.)	1970
52 Week Low (Rs.)	497
Mkt Cap (Rs bn.)	20.88
Mkt Cap (\$ bn.)	0.25
Shares o/s (Mn.)/Free Float (%)	12.9/40
Adj. TTM EPS (Rs)	10
EPS FY26E (Rs)	61.6

### Shareholding Pattern (%)

	Dec-23	Sep-23	Jun-23
Promoters	58.79	58.80	58.80
FII's	0.38	0.48	0.11
DII's	7.25	7.93	7.66
Public	33.58	32.79	33.43

### Relative Performance (%)

YTD	3Y	2Y	1Y
Centum Elec.	243	181	159
BSE 200	58	27	30

### Rebased Price Performance



## About the Company

Centum Electronics Limited (Centum) is a leading Electronics System Design & Manufacturing (ESDM) Company providing mission critical services and solutions to customers engaged in the Defence, Aerospace, Space, Medical, Mobility and Industrial segments that demand high reliability products and services. With three decades of experience in design, development, and manufacturing of complex products, Centum is a strategic supplier and partner to large global OEMs (including Fortune 500 companies) and public entities such as Indian Defense Public Sector Units (DPSUs), Ordinance Factories (newly formed DPSUs), DRDO and ISRO.

Company has an established global footprint with multiple design & manufacturing locations in Europe, North America, and India. More than 70% of the Company's revenue is generated from international customers and markets.

The Company's mission is "To create value by contributing to the success of its customers, by being their innovation partner and offering design & manufacturing solutions in high technology areas."

The strategy over the years has been consistent and is based on innovation, advancing technology as the path to differentiating value for customers, ensuring culture of quality, while embracing the responsibility for the wellbeing of our associates and communities

### Engineering R&D Services (ER&D)

- Engineering Services involve conceptualizing, designing and certifying of Electronic Hardware, Embedded Software, FPGA, Analog, Radio Frequency products, Power Electronics, etc.
- Centum Group has a global design strength of over 650 design engineers and for the last 25 years, the company has been helping customers turn their ideas into products.
- Centum's engineers work together in multidisciplinary teams to realize customized products for mission-critical applications in high technology segments.
- The company's design centers are located in Europe, North America and India, which enable the company to work closely with international customers while bringing together the best talent from around the world to work on complex problems and provide a competitive solution by managing the optimal onshore/ offshore mix for the projects.
- Centum also provides flexible engagement models depending on the specific project requirements. Customers can choose between Consulting Engagements and Fixed Price Contracts.

### Electronic Manufacturing Services (EMS)

- The company's EMS Services include manufacturing solutions focused on a High reliability, High Complexity products in the high technology segment.
- Centum offers a wide range of manufacturing solutions from Printed Circuit Board assemblies to Complex box builds, Line Replaceable Units (LRU) and full system integration.
- The company helps its customers realize challenging products by having customer-focused teams that leverage their streamlined processes and systems and adapt them to the specific requirements of the customer and product where necessary.
- By providing scalable manufacturing solutions and a flexible, proactive approach to managing the supply chain and lifecycle related challenges, Centum helps customers achieve their goals of lower Total Cost of Ownership and reduced time-to-market among others.

### Build to Specification (BTS)

- The Built to Specification services include taking a project from conceptualization to mass production quickly and efficiently. Centum's unique positioning with a full range of integrated capabilities makes it the ideal product realization partner.
- Customers choose turn-key build to spec offering due to the convenience of a Single Point of contact for Design/Engineering, Industrialization and Manufacturing which reduces the need for multiple interfaces at each stage of the project and also fastens the products time-to-market and facilitating a Design-To-Cost approach and reducing the Total Cost of Ownership. This engagement model involves higher IP and value creation opportunities for both the customer and for Centum.
- The company is also able to better the product Lifecycle management by proactively and effectively managing issues such as obsolescence, performance upgrades, market specific localization and cost reduction.



Manufacturing facilities

India



Source: Company, CEBPL

France



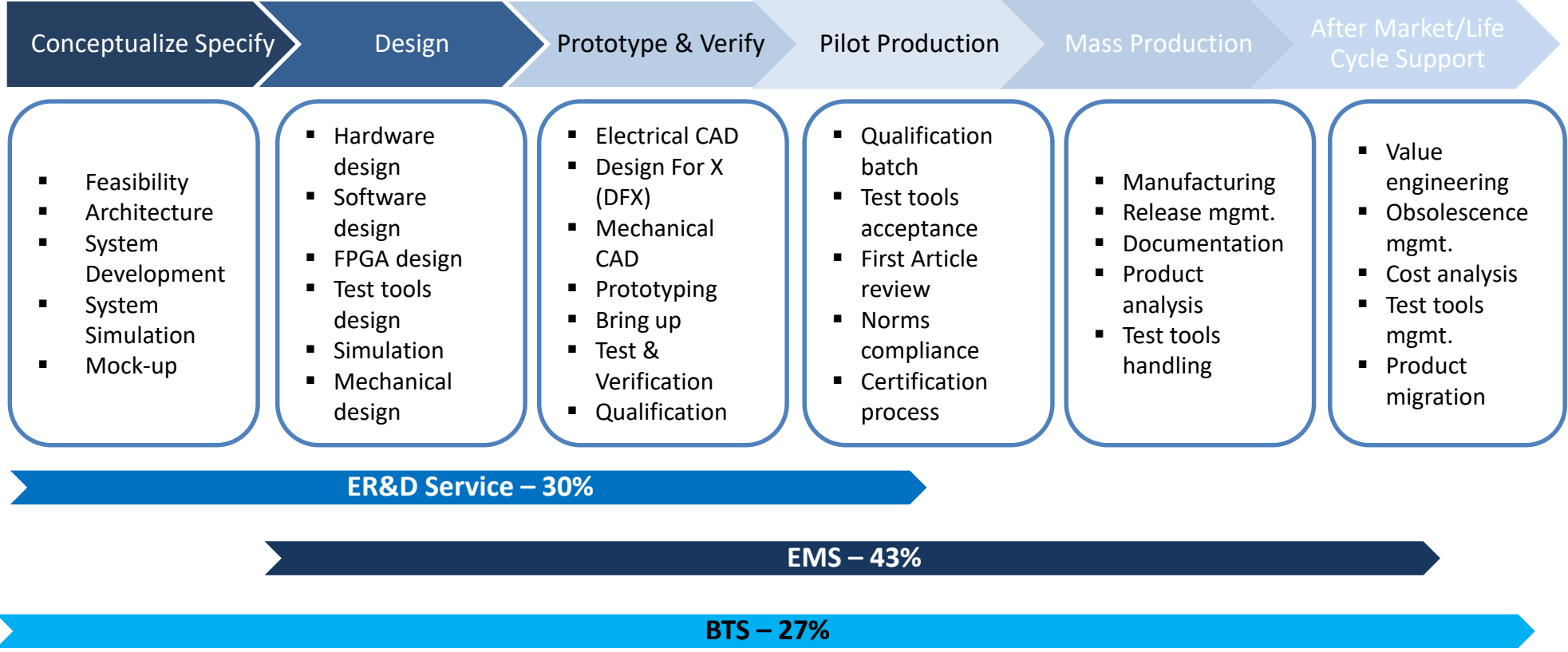
Source: Company, CEBPL

Belgium & Canada



Source: Company, CEBPL

The Company Offers



Business Segments and Sectors Served							
	Defence	Space	Aerospace	Transportation	Automotive	Industry & Energy	Healthcare
ER&D	●	●	●	●	●	●	●
EMS	●		●		●	●	●
BTS	●	●	●	●	●		●

Source: Company, CEBPL

## Key Milestones

**1993 – 2006****Initial Years**

Incorporated and set up manufacturing facility for Hybrid Microelectronics.  
 Inaugurated as a pioneer in High-Tech electronic manufacturing in India  
 Established a leading position in the Indian telecom components market  
 JV with CMAC Industries Canada followed by entry and growth in export markets  
 Foray and growth in EMS business following Solectron's acquisition of CMAC Industries

**2006 - 2010****Restructuring**

Demerger of EMS into Solectron EMS  
 Buy back & Merger of EMS following Flextronics' acquisition of Solectron  
 Centum Rakon JV formed for Frequency Control Products (FCP) for technology and market access to global OEMs  
 Exit of domestic telecom components business for C-DOT

**2010-2016****Growth across the board**

FCP business growth in Telecom due to product performance & global cost leadership  
 Defence & Space segment growth due to indigenization thrust and defence offset policy  
 Growth in EMS business after investment in international Sales & Marketing

**2016-2022****Future Proof Expansion**

Greenfield expansion for EMS capacity  
 Acquisition of Adetel Group to expand service offerings of ER&D Services, establish global footprint across Europe and North America and new customer/market access  
 Exit from FCP component business through the sale of 51% stake to JV partner  
 Capacity enhancement for space & defence business to support strong order book growth  
 Segment focus on EV and Clean Tech

Source: Company, CEBPL

## AEROSPACE SECTOR

- The Aerospace industry has several ongoing technological initiatives to make aircrafts more fuel-efficient, environmentally friendly and safer, which involves incorporating more electronics on board, making avionics platforms more configurable, and of course factoring in environmental issues and reducing human error to improve safety.
- Alongside products for command & control, power electronics and energy storage applications, Centum is also developing activities in ground and flight testing -- using its own test benches and simulators.
- Centum plays a key role in the global aerospace supply chain delivering critical electronics for cockpit computers, Air Traffic Management and also works closely with OEMs to design next-generation flight controls, Power solutions among various other technologies.



### EMBEDDED COMPUTERS

System architecture, hardware design, software development, housing and wiring, verification & validation. We have the know-how of all the Critical technologies to design embedded computers for various Aerospace applications to DAL A critical safety level.



### TEST-TOOLS

Development of test tools for certification, design qualification, manufacturing test, repair- diagnosis. Our experienced & highly skilled team is competent to develop the most complex test benches with the relevant software.



### POWER MANAGEMENT

We offer Design, Development & manufacturing of Embedded Power Converters for Aerospace & Defense markets Segment which demand compact, reliable & cost effective solutions without compromising the functionality of energy switching, EMC, monitoring & thermal management.



### LRU & AVIONICS LRUs

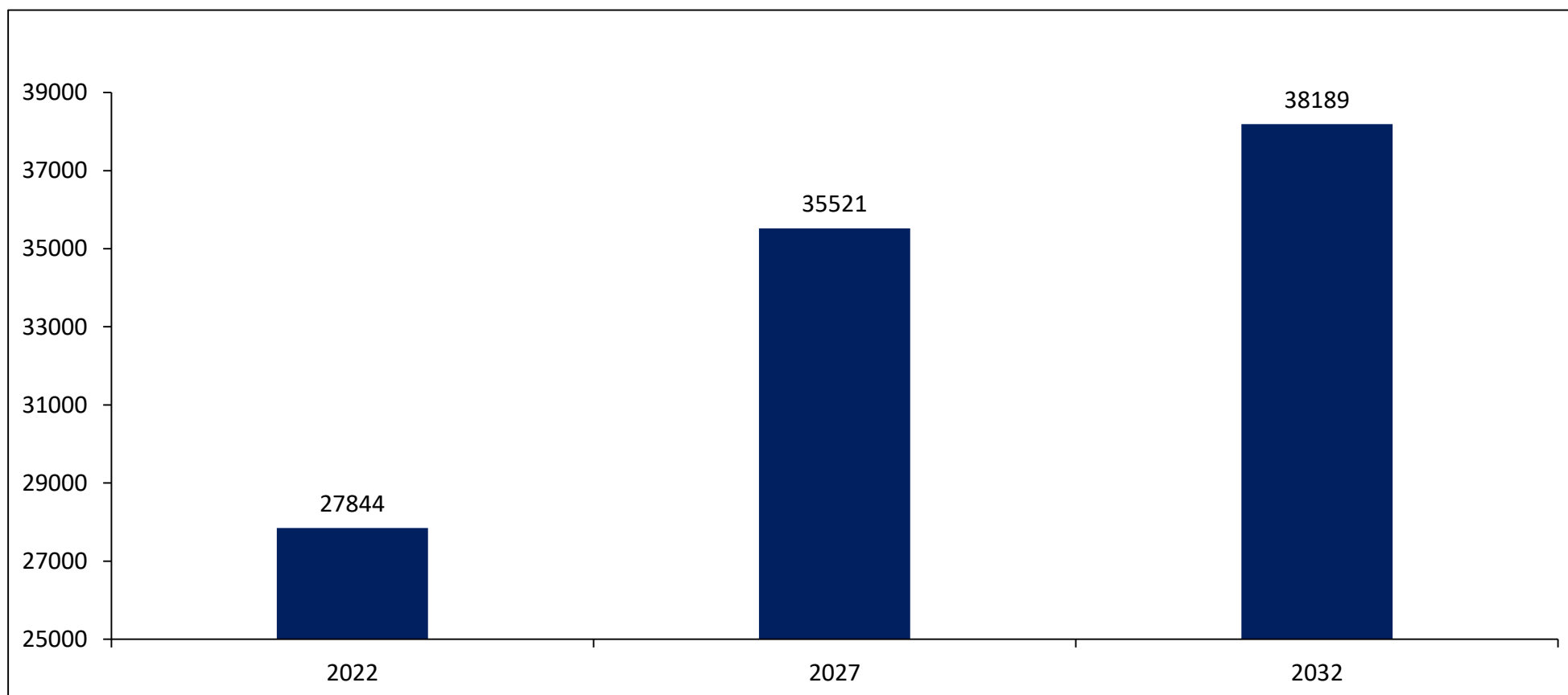
LRU & Avionics LRUs: Redesign, Value Engineering, manufacturing & Complex Testing. Our engineering & manufacturing teams can build & test very complex LRU's, Rack systems running into 1000's of work instructions and multiple levels of testing.

Source: Company, CEBPL



## Global Aeroplane Fleet Forecasted 2022-2032

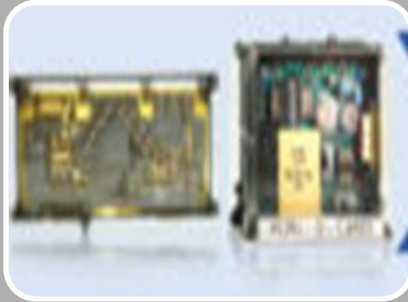
- The global fleet size, which stands at 27,844 in 2022 is expected to reach 38,189 by 2032 at a CAGR of 2.7%.<sup>2</sup> Figure 1 depicts the global fleet forecasts for 2027 and 2032. Globally, the overall passenger traffic in 2021 was around 47% of the 2019 levels, and is predicted to improve to 83% in 2022, 94% in 2023, 103% in 2024 and 111% in 2025.<sup>3</sup> Similarly, the air cargo market, which was valued at USD 130.1 billion in 2019, is expected to reach USD 223.29 billion by 2028, registering a CAGR of 8%.<sup>4</sup> The rise in fleet size, as a result of increased trade and passenger movement.



Source: Govt of India, CEBPL

## SPACE SECTOR

- Space technology is progressing at a rapid pace driven by commercial applications such as satellite broadcasting, communication, Earth observation, geo-location, and global navigation equipment and services.
- Centum has established a credible track record since 2002 in this segment delivering complex products that address applications in launch vehicles, satellite payloads, satellite bus systems as well as ground equipment.
- The company is also a leading electronics industry partner and one of the largest private contractors for ISRO, involved in its various stages of design, development, qualification and production of electronic modules, subsystems and systems for multiple applications in satellites and launch vehicles. Keeping in mind the growing number of missions of ISRO.
- Centum has made significant investments to ensure that they can deliver products with the right quality, technology and in required quantities to be a trusted partner. It has delivered mission-critical electronics on almost all satellite programs of ISRO including the ambitious Chandrayaan and Mangalyaan projects, and also delivered 300 to 500 components for almost every Indian space mission.



### SATELLITE BUS SYSTEMS

Modules for Controls, Sensors, Telemetry, Remote control, Data Handling, Power, Sensors and Sensor Electronics subsystems for Remote Sensing, Geo-stationary, Navigational, Meteorological and scientific mission satellites.



### SATELLITE BASED SENSORS

Redesign, Value Engineering, manufacturing & Complex Testing. Our engineering & manufacturing teams can build & test very complex LRU's, Rack systems running into 1000's of work instructions and multiple levels of testing.



### POWER MANAGEMENT

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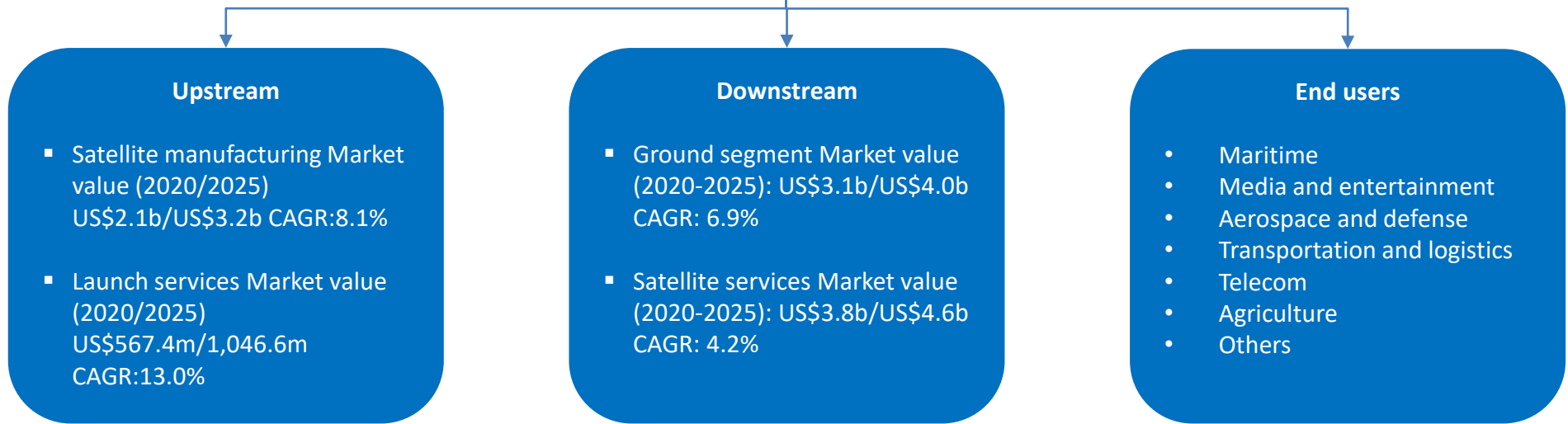
### RF & MICROWAVE

Development of test tools for certification, design qualification, manufacturing test, repair- diagnosis. Our experienced & highly skilled team is competent to develop the most complex test benches with the relevant software.

Source: Company, CEBPL

Indian space economy - set for accelerated growth

Indian space segments



Opportunities in the Indian Space Sector

▪ India contributed 2.1% to the global space industry economy in 2020, amounting to US\$ 9.6 billion, with a contribution of 0.4% to the country's gross domestic product (GDP).

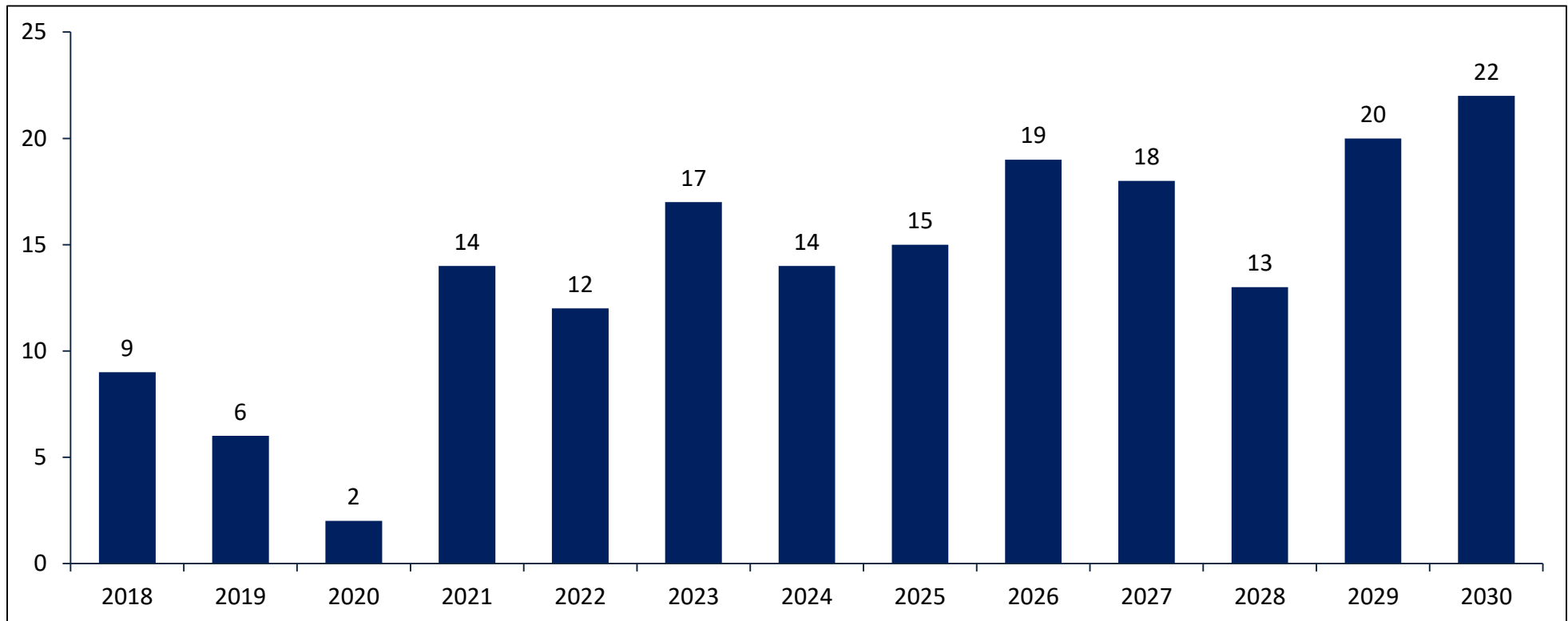
<p><b>Satellite Manufacturing</b></p> <ul style="list-style-type: none"> <li>• Market Size           <ul style="list-style-type: none"> <li>- 2020: US\$ 2.1 bn.</li> <li>- 2025: US\$ 3.2 bn.</li> </ul> </li> <li>• CAGR 8.1%</li> </ul>	<p><b>Launch Services</b></p> <ul style="list-style-type: none"> <li>• Market Size           <ul style="list-style-type: none"> <li>- 2020: US\$ 567.4 Mn.</li> <li>- 2025: US\$ 1046.6 Mn.</li> </ul> </li> <li>• CAGR 13.0%</li> </ul>	<p><b>Satellite Services</b></p> <ul style="list-style-type: none"> <li>• Market Size           <ul style="list-style-type: none"> <li>- 2020: US\$ 3.8 bn.</li> <li>- 2025: US\$ 4.6 bn.</li> </ul> </li> <li>• CAGR 4.2%</li> </ul>	<p><b>Ground Segment</b></p> <ul style="list-style-type: none"> <li>• Market Size           <ul style="list-style-type: none"> <li>- 2020: US\$ 3.1 bn.</li> <li>- 2025: US\$ 4.0 bn.</li> </ul> </li> <li>• CAGR 6.9%</li> </ul>
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Source: Media search, CEBPL

## Indian Satellite Manufacturing Market Opportunity

- The demand for Indian market is mainly driven by civil government and commercial sectors having a market share of 88.70% and 11.29% respectively. The Key applications for the sector include IoT/M2M, Technology and Communication. In case of IoT/M2M the demand is 100% from commercial players. For Technology, the demand is mainly driven by Civil Government having a market share of 99.92%.
- The demand for light weight satellite solutions is experiencing significant growth, mainly driven by the emergence of multiple planned satellite constellations and the adoption of an easy plug-and-play approach for assembling CubeSats. Additionally, the utilization of Commercial Off-The-Shelf (COTS) components in low weight satellites, particularly in Pico, Nano, and Microsatellites, has further contributed to this trend.
- Historically the revenue for satellite manufacturing has reduced in the last two years owing to the reduction in number of satellites launched i.e., 77.3% decrease. Frost & Sullivan's estimates the Indian satellite manufacturing revenues to be \$803.26 Million as of 2021, which is expected to grow up to \$1061.5 Million by 2030, growing at a CAGR of 3.15%. **The 0-75Kg segment is estimated to be \$0.95 Million as of 2021 and is expected to grow up to \$3.39 Million by 2030, growing by a CAGR of 15.18% for the Indian Market.**

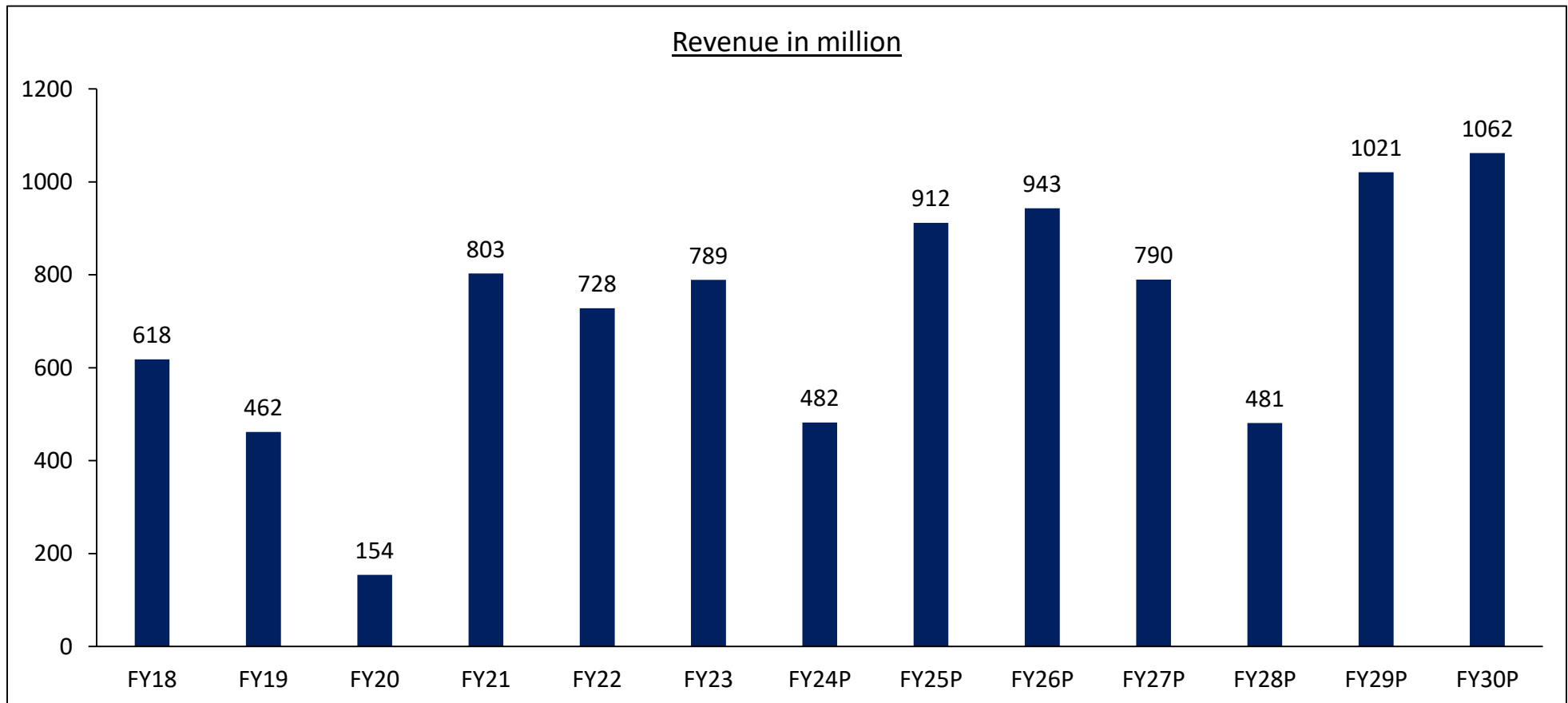
## Indian Satellite Manufacturing Forecast (Units; No. of Satellites CY 2021-2030)



Source: Media search, CEBPL

## Indian Satellite Manufacturing Revenue Forecast CY 2021-2030

- Over the past two years, there has been a historical decline in revenue for satellite manufacturing, mainly due to a significant decrease in the number of satellites launched, amounting to a reduction of 77.3%. According to Frost & Sullivan's estimates, the Indian satellite manufacturing revenues reached \$803.26 Million in 2021 and are projected to grow to \$1061.5 Million by 2030, at a Compound Annual Growth Rate (CAGR) of 3.15%.
- In the Indian market, the 0-75 Kg 170 segment is currently valued at \$0.95 Million as of 2021, and it is anticipated to expand to \$3.39 Million by 2030, exhibiting a robust CAGR of 15.18%.



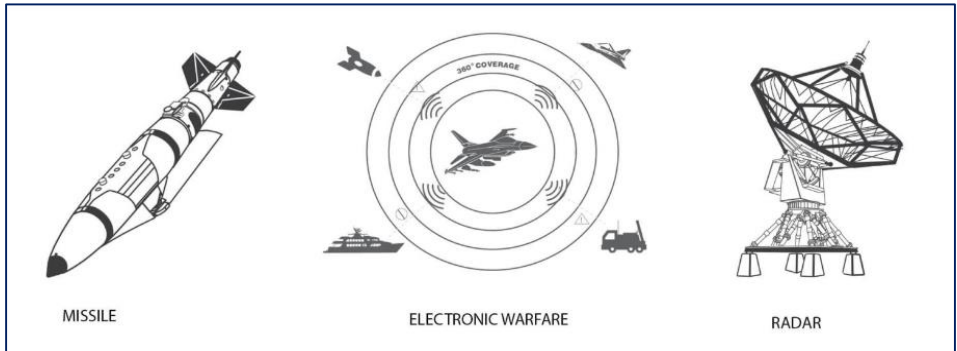
Source: Media search, CEBPL

- The Indian market's demand for satellite manufacturing is primarily fuelled by the civil government and commercial sectors, holding market shares of 88.70% and 11.29% respectively. Key applications in this sector encompass IoT/M2M and Technology and Communication. For IoT/M2M applications, the demand is entirely driven by commercial players. On the other hand, for Technology applications, the demand is primarily led by the civil government, with a dominant market share of 99.92%.



**DEFENCE SECTOR**

- **Centum started its defence business in 2010 and it is today the largest industry vertical for the company.** Over the years the company has been successful in developing and manufacturing critical systems for major Defence programs that span across the land, air and naval systems with applications in Missiles, Electronic Warfare, Radar, Military Communications, and fire control amongst many.
- For the past two decades, Centum has also been engaged in the development and manufacture of modules, subsystems for missiles, radars and military electronic warfare communication applications for DRDO laboratories, Ordnance Factories and other domestic defence PSUs, and over the past decade, Centum has become one of the select few Indian partners to international defence OEMs as well.



**ONBOARD COMPUTER SYSTEMS** – Technology Partner to many strategic and tactical missile programs with design, assembly of critical subsystems such as OBC, FOG sensor electronics and controllers.



**RECEIVER & SEEKER ELECTRONICS** – Design Development & Qualification of Laser Receiver for Control and Guidance systems. Capabilities also include Manufacturing, assembly & test of complex seeker systems demanding special processes.



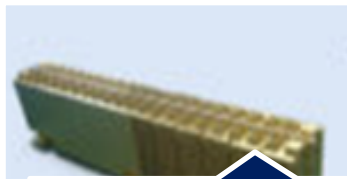
**TRANSMIT RECEIVE MODULES** – In-house design & manufacturing capabilities for C, S and X band TR Module.



**HIGH POWER RF AMPLIFIER** – Pulse Power amplifier for IFF, Pre-Amplifiers, Power ranging from few watts to Kilo Watts.



**VIBRATION HARDENED OSCILLATORS** – Design and Manufacture of Ultra-stable OCXOs with excellent phase noise under dynamic conditions. Timing devices (VCXO, CLOCK OSCILLATORS, TCXO and OCXOs) for mission critical application qualified to various MIL and SPACE standards.



**POWER CONVERTERS & SYSTEMS** – Buck, Boost, Buck-Boost and multiple topologies – Single and Multiple (Continuous and Pulsed outputs) – Combination of Hybrid, SMT and Mixed technologies. Power ranging from few watts to Kilo watts for Space & MIL applications.



**DIGITAL RECEIVERS** – High Speed FPGA based digital subsystem that digitizes Radar signals and performs signal processing to measure the parameters.



**ELINT CONTROLLERS** – FPGA based Digital Sequencer and Payload controller providing interface with recorders and data handling subsystems.



**POWER CONDITIONING AND PROCESSING UNIT** – Provides continuous and pulsed power solutions to TR modules and Controllers.



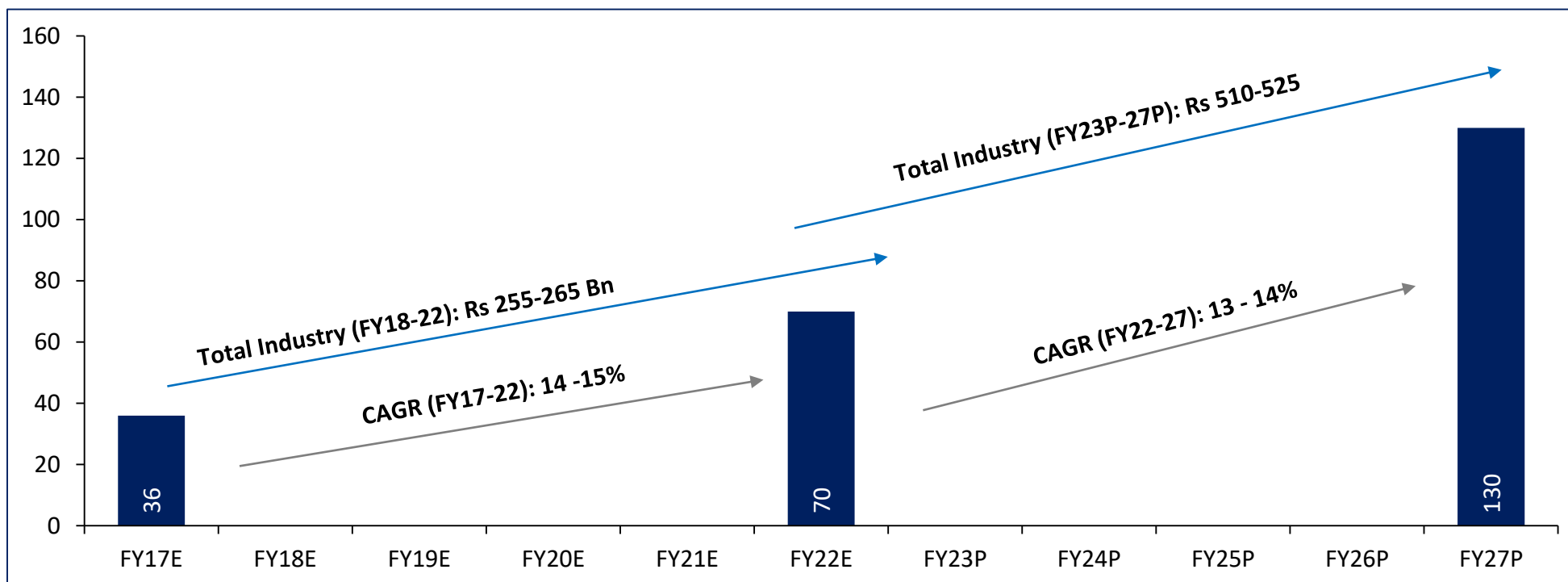
**RADAR FINGER PRINTING SYSTEMS** – High speed FPGA based digital system processing the Radar signal and identifying the parameters of the signal.

Source: Company, CEBPL

## Radar systems market to log 13-14% CAGR over fiscals 2022-27

- The size of the radar systems market was cumulatively estimated at ₹255-265 billion over fiscals 2018-22. The market size was estimated at ₹34-36 billion as of fiscal 2017 and grew at a 14-15% CAGR over fiscals 2017-22 to ₹68-70 billion. It is expected to grow at a 13-14% CAGR over fiscals 2022-27 to an estimated ₹125-130 billion. The market will achieve a cumulative size of ₹510-525 billion during fiscals 2023-27, at a multiplier of ~2.0, compared with the cumulative fiscals 2018-22 market.
- The radar systems market is driven by demand from the military forces for detecting enemy movements. Key players in this space are DRDO and BEL. DRDO designs, develops, and tests new radar products and technologies. It enlists the private sector's help in the development process for supply of critical sub-systems of the radar system. With regard to new technology, the development of the first product takes 3-4 years, followed by 6-12 months of testing. Subsequently, production is initiated based on the order quantity.
- With the private sector gaining prominence, private players are now directly competing for defence tenders and providing turnkey solutions, based on technology transfer from DRDO or in-house developed products. A limited number of private players in the sector are capable of providing these critical systems and sub-systems, given that high technical expertise and relevant infrastructure is required to produce these components. Private players present in the space include Astra Microwave Products Ltd, Data Patterns (India) Ltd, and Tata Advanced Systems.

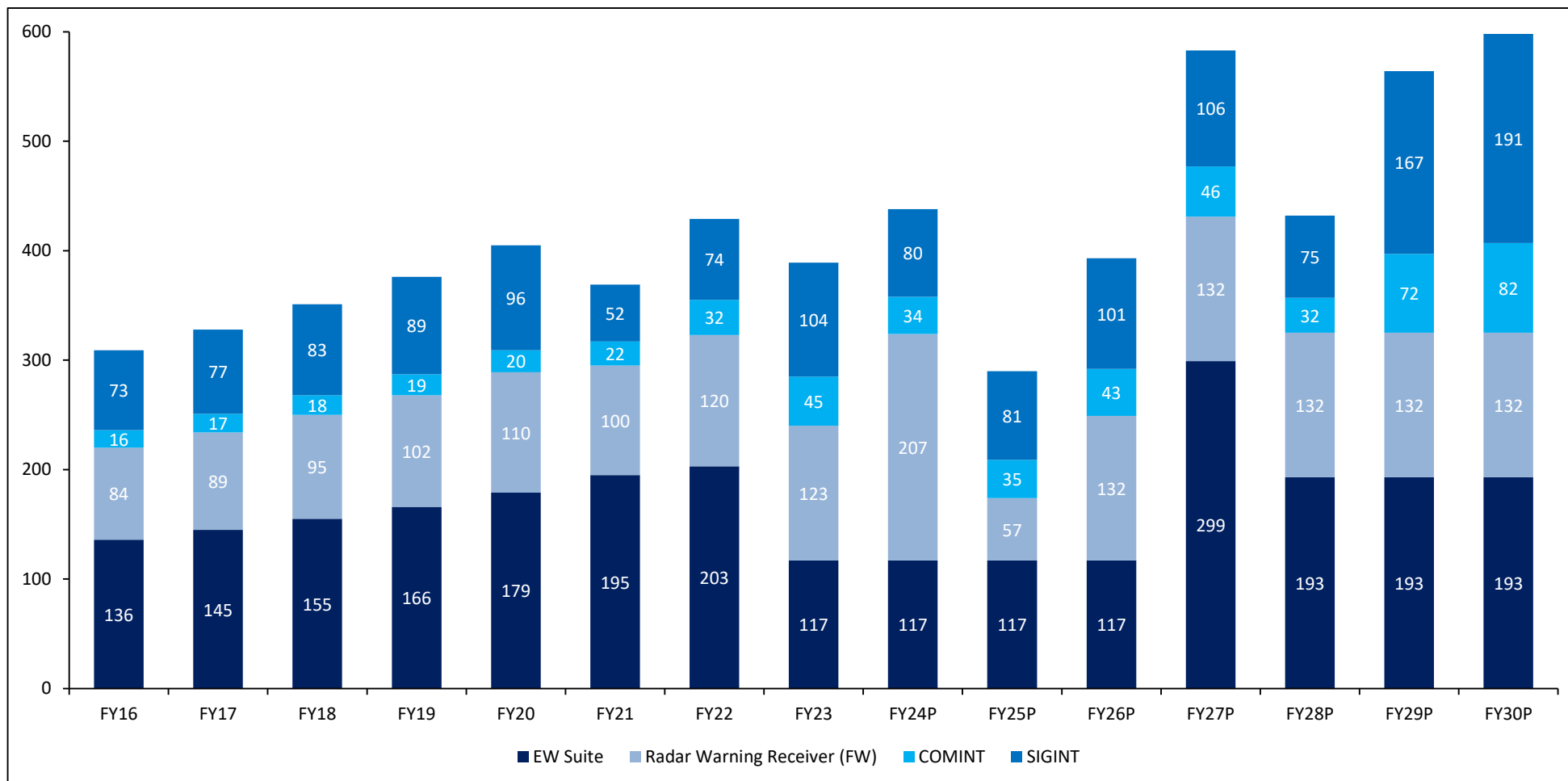
## Total radar systems market (Rs. billion)



Source: Company, CEBPL

## India Airborne EW Market in USD Millions

- The Air borne Electronic Warfare(EW) market demonstrated significant growth, accumulating a total value of approximately \$1.8 billion from 2016 to 2020, with a Compound Annual Growth Rate(CAGR) of 7% during that period. As of 2021, the market is estimated to be valued at around \$378 million, and it is projected to reach approximately \$606 million by 2030, with a CAGR of 5.4%. The growth is primarily driven by the modernization of platforms, such as the Indian Air Force's(IAF) requirement for 200+ single-engine fighters, procurement of HAL Tejas, Dassault Rafale, A330s, C-295, and future acquisitions like the HAL AMCA. Additionally, modernization efforts for existing platforms will contribute to the market's expansion.

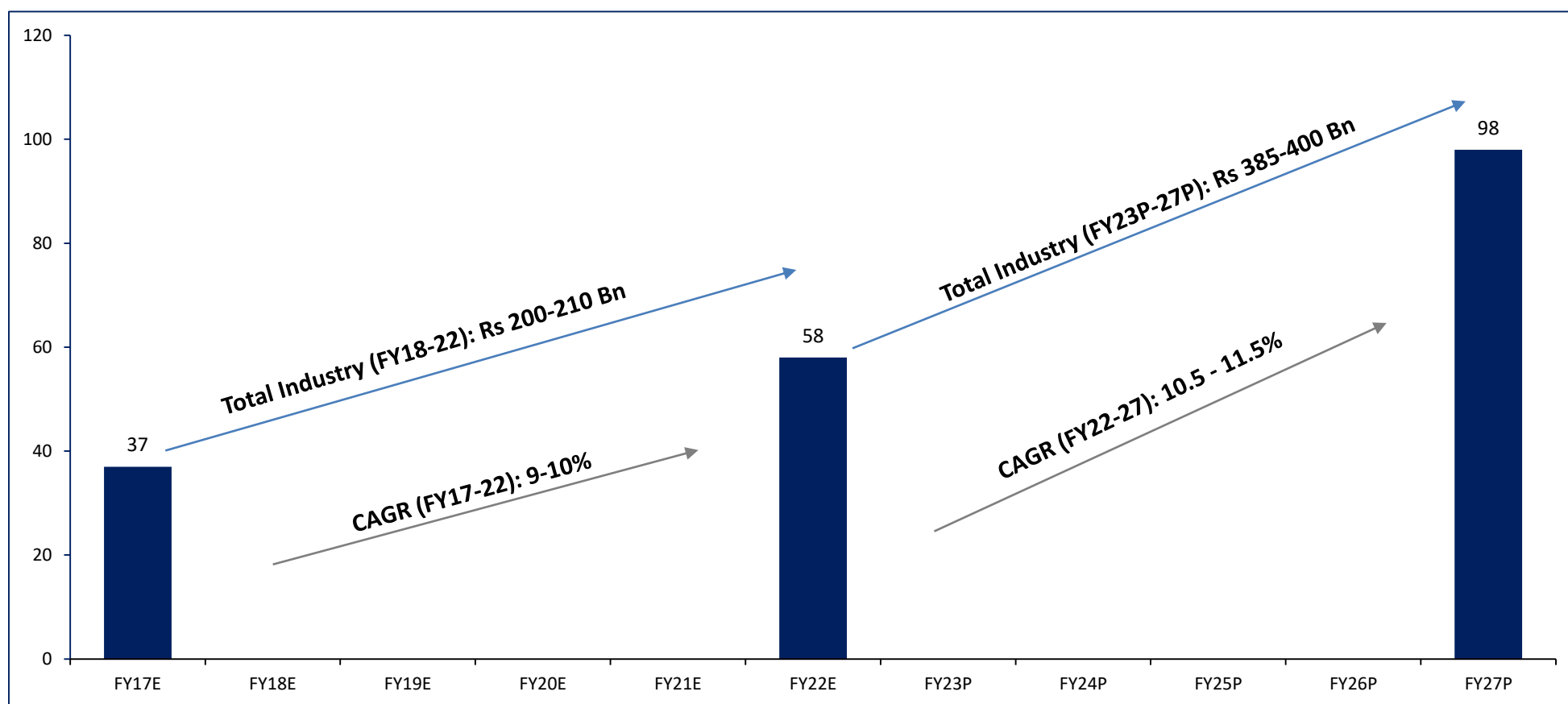


Source: Media search, CEBPL

## Missile system electronics and telemetry market to log 10.5-11.5% CAGR over fiscals 2022-27

- The size of the missile system electronics market was cumulatively estimated at Rs 200-210 billion over fiscals 2018-22. As of fiscal 2017, it was estimated at Rs 35-37 billion. The market size grew at a 9-10% CAGR over fiscals 2017-22 to Rs 56-58 billion. It is expected to grow at a 10.5-11.5% CAGR over fiscals 2022-27 to an estimated Rs 93-98 billion. The market will achieve a cumulative size of Rs 385-400 billion over fiscals 2023-27, at a multiplier of ~1.9, compared with the fiscals 2018- 22 market.
- The government is incorporating state-of-the-art technology in the weapon systems of the armed forces. This is imperative, given the current geopolitical situation, as India needs to ensure competitive supremacy of its weapon systems. India is constantly striving to improve its arsenal through the development of technology and constant testing

## Total missile system electronics and telemetry market (Rs. billion)

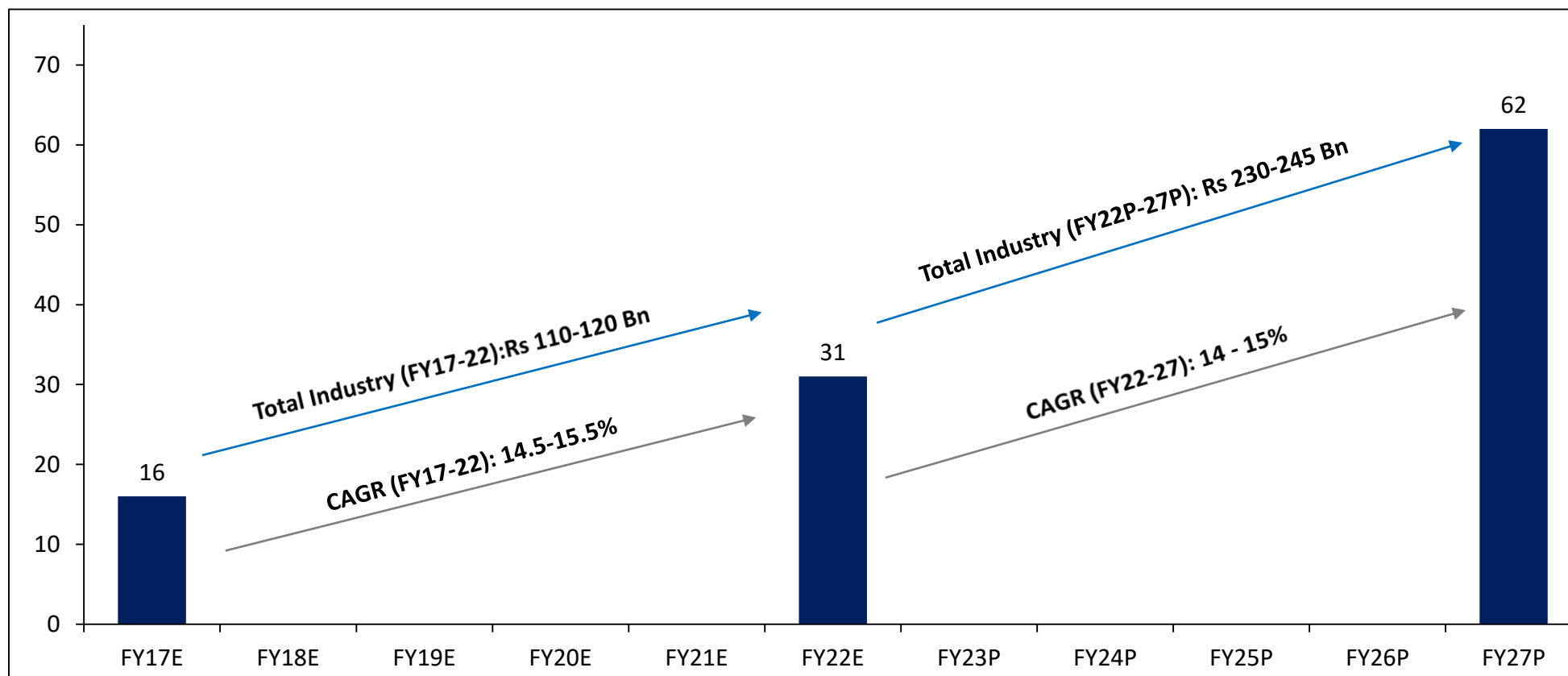


Source: Media search, CEBPL

## Electronic warfare market to log 14-15% CAGR over fiscals 2022-27

- The EW market size was cumulatively estimated at Rs 110-120 billion during fiscals 2018-22. As of fiscal 2017, the market size was estimated at Rs 14-16 billion. It grew at a 14.5-15.5% CAGR over fiscals 2017-22 to Rs 29-31 billion. It is expected to grow at a 14-15% CAGR over fiscals 2022-27 to an estimated Rs 57-62 billion. The market will achieve a cumulative size of Rs 230-245 billion during fiscals 2023-27, at a multiplier of ~2.1, compared with the cumulative fiscals 2018-22 market.
- EW systems will keep gaining prominence in the Indian armed forces as a key weapon system, considering enemy nations are also improving their technological prowess in EW. Apart from the currently employed EW systems, there is a developing use of satellite-based GPS systems, remotely controlled UAVs, and cyber tools for disrupting enemy activities and infrastructure. In future, EW systems will be fully integrated with cyber warfare elements in wars. This is already in development across various nations.

## Total EW market (Rs. billion)



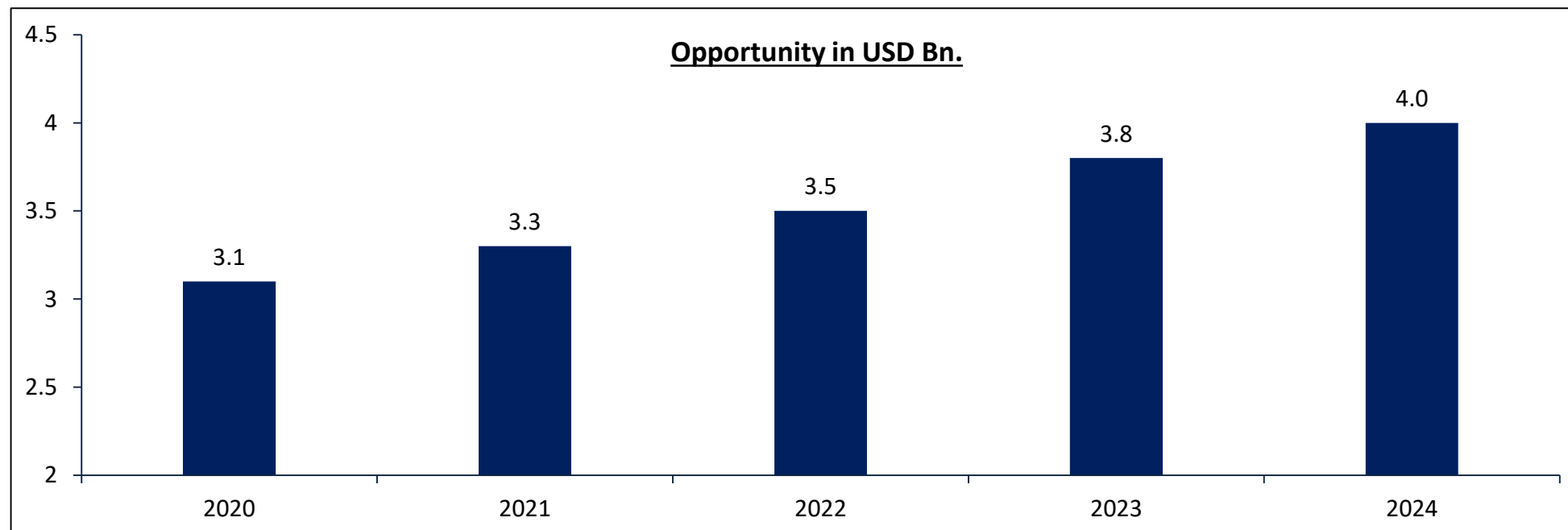
Source: Media search, CEBPL



## COMMUNICATION SECTOR- Opportunity in Ground station

### Ground Segment

- The network operation centers and earth stations on the ground comprise a satellite communications system or network. Gateways and earth stations are leveraged to control satellites along with up-linking and down-linking of data from satellites. The ground segment is connected with an end user's equipment directly or via a terrestrial network.
- **An overview of ground-based systems**
- Satellite ground systems are constructed in order to receive information from the satellites and transmit it to various user across applications. Satellite ground stations include major components such as receiver, transmitter, antenna and tracking system. A receiving earth station receives the signals while the transmitting earth station is used for transmission of signals, ins some cases both receiving and transmitting is done by the same earth station.
- **Antenna** consists of two major parts which include a feed system and an antenna reflector. These two parts together are utilized for radiating or receiving of electromagnetic waves to and from the satellite.
- **Receiver** is used in reception of communication from the satellite. Generally, the signal received from the satellite has less strength. In receiver, the feed system transmits the signals to Low Noise Block (LNB) wherein the signal is amplified without losing any noise. 308
- **Transmitter** as the name mentions is used to transmit signal from the ground station to satellite. The transmitter consists of a up converter which converts the signal to a high frequency which is then amplified using high-power amplifier. This signal is then transmitted.
- **Tracking subsystem** major has two functions which include satellite acquisition and satellite tracking. It is used to track the satellite and to make sure the receiver is oriented rightly to receive the signal from the satellite. The tracking can be done by either through automatic tracking, manual tracking or through programmed tracking.



Source: Company, CEBPL

**AUTOMOTIVE SECTOR**

- **Centum, a specialist in electronics design and manufacturing services**, is actively involved in supporting customers in the automotive industry as it undergoes a dynamic transformation. This transformation is marked by the entry of new players who introduce disruptive technologies, particularly in the areas of autonomous driving, powertrain architecture, and connectivity, among others.
- Centum leverages its strong knowledge and experience in developing products for safety and critical applications to assist automotive customers in designing and producing high reliability and technologically advanced solutions. For instance, Centum has successfully developed and manufactured encoders for electric three-wheeler applications, which play a crucial role in last-mile connectivity.
- Additionally, Centum's manufacturing expertise enables them to produce high-voltage inverters for electric buses, contributing to the advancement of e-mobility. Also delivered low-voltage inverters, battery management systems, and sensors used in last-mile connectivity solutions, further emphasizing focus on supporting the electric vehicle ecosystem.
- Moreover, Centum's commitment to high technological standards is exemplified through their contribution to the electronics used in hydrogen fuel cells. This involvement signifies their dedication to pushing the boundaries of innovation and sustainability in the automotive industry.



Assisted Car Navigation – Passive Rollover Avoidance System



Automotive Telematic Module



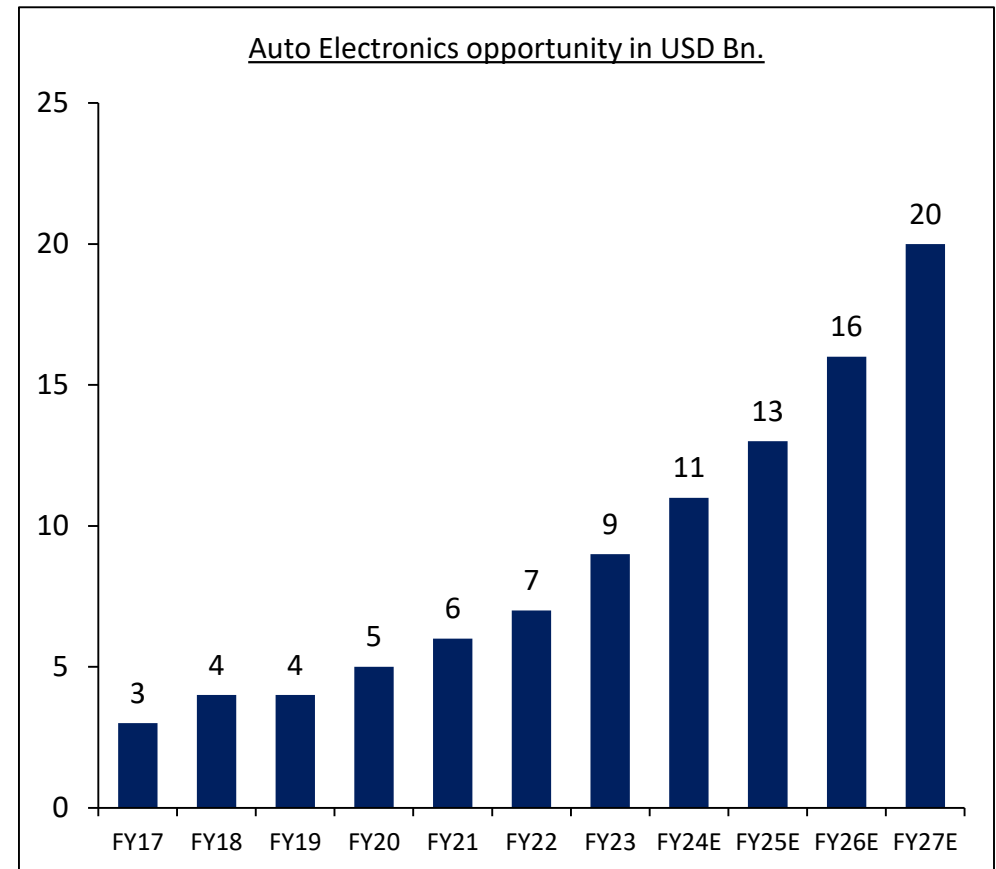
Automotive Flexray Demonstrator



Automotive Elec Borad For Solar Roof – Smartop Project



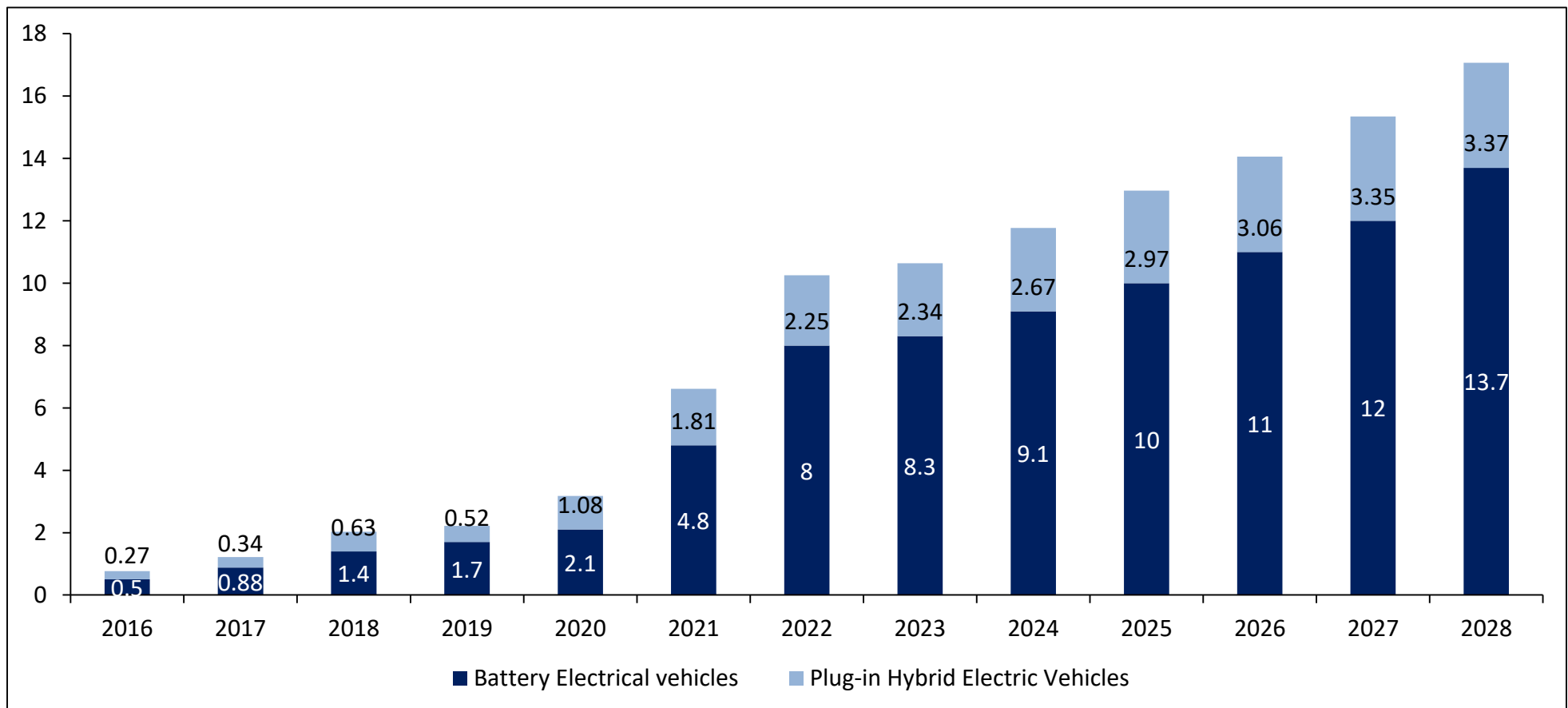
Power Steering Encoder Acquisition System



Source: KPMG report, CEBPL

**Global annual EV sales (million units)**

- In 2024, the revenue in the Electric Vehicles market is projected to reach a staggering US\$623.3bn worldwide. Looking ahead, it is expected that the market will demonstrate a steady annual growth rate (CAGR 2024-2028) of 9.82%. This growth will ultimately lead to a projected market volume of US\$906.7bn by 2028. Moreover, the unit sales of Electric Vehicles market are anticipated to reach 17.07m vehicles units by 2028.
- When examining the market in 2024, it is predicted that the volume weighted average price of Electric Vehicles market will amount to US\$52.9k. From an international perspective, it is evident that in China will generate the highest revenue, with an estimated US\$319,000m in 2024. This showcases the significant presence of Electric Vehicles market in the Chinese market segment. Electric vehicle adoption is rapidly increasing worldwide, with countries like Norway leading the way in terms of market share.



Source: Statista, CEBPL

**MEDICAL SECTOR**

- The field of healthcare is rapidly adopting new technologies to augment the quality of treatment and create efficiencies for healthcare providers.
- Centum has engineered a variety of medical devices and equipment for the Healthcare industry that include digital radiography systems, automated pumps for drug injection, ultrasound equipment, patient monitoring devices, customized room controls for operation theaters among others.



Medical Electronic Board



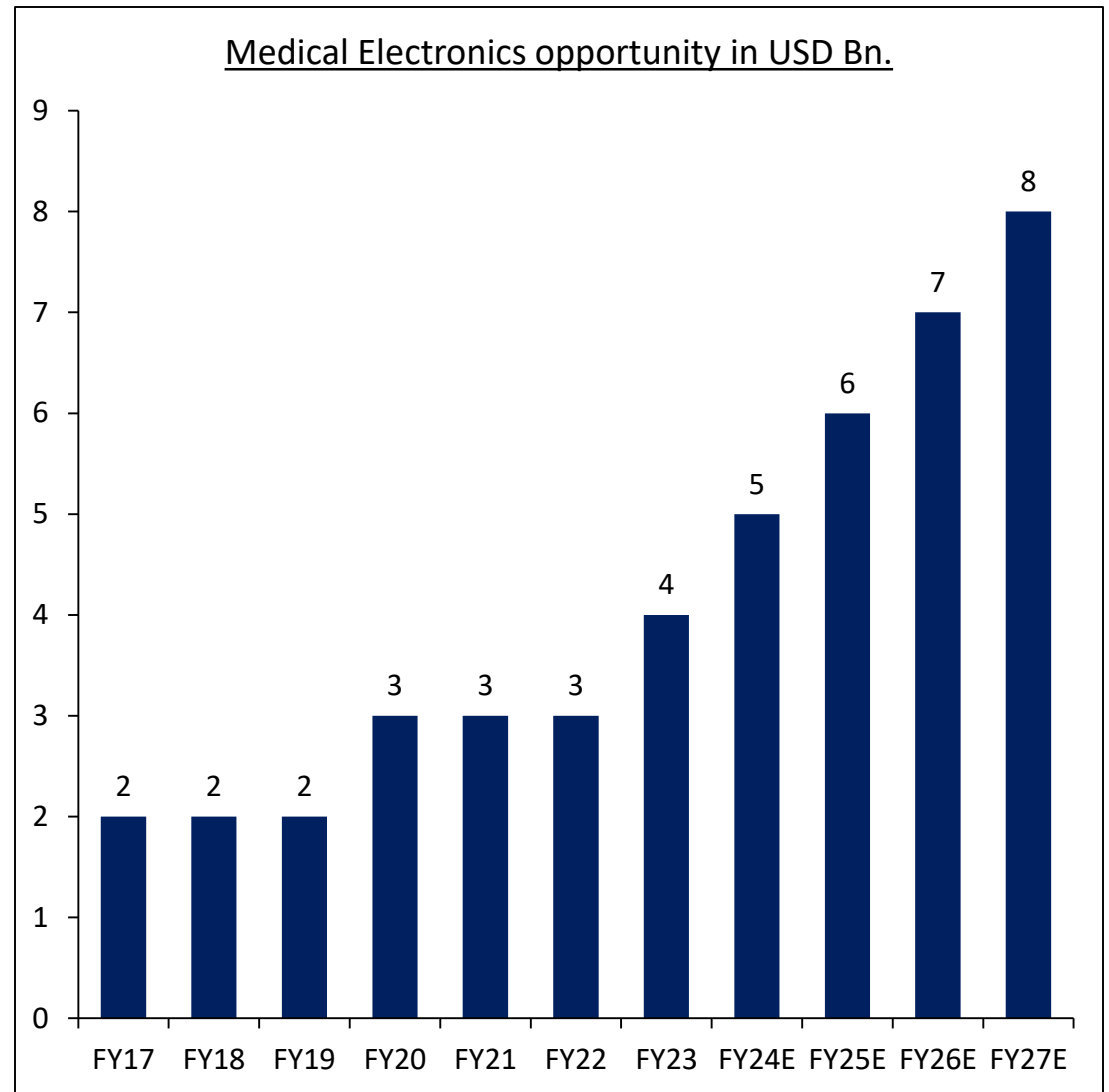
Medical Flat Panel Acquisition Board



Medical Panel For Surgery Room



Medical Product test Area



Source: IBEF, CEBPL

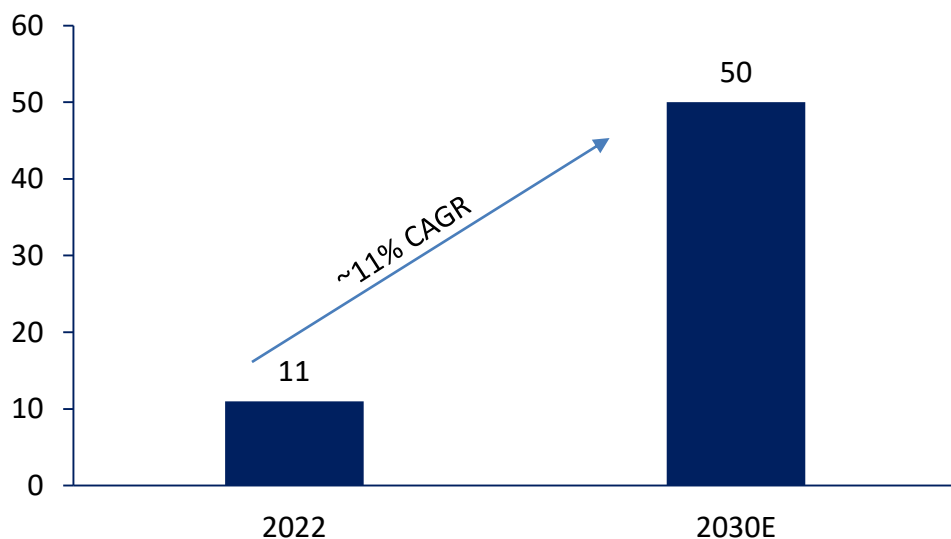
### Growth in medical devices

- As of 2022, the medical devices market is estimated to be at US\$ 11 billion in India. India is the 4<sup>th</sup> largest Asian medical devices market after Japan, China, and South Korea, and among the top 20 medical devices markets globally. However, it has the potential to surpass its peers in terms of size and scale; this is based on the government's support the sector has received over the past several years. India's medical devices market is projected to reach US\$ 50 billion by 2030. Between 2022-2030, diagnostic imaging is likely to expand at a CAGR of 16.4%. The medical devices sector in India comprises large multinationals, and small and mid-sized companies.
- This sector, which is growing faster amid the pandemic, offers great opportunities for domestic players, particularly engineering MSMEs, to further penetrate the global markets. The Government of India (GOI) has commenced various initiatives to strengthen the medical devices sector, with emphasis on research and development (R&D) and 100% FDI for medical devices to boost the market. India added significant production capacity for various critical care items such as PPE kits, surgical gloves, sanitizers and N95 masks, and emerged as a significant destination for manufacturing of healthcare products and services.

### Export scenario of medical devices in India

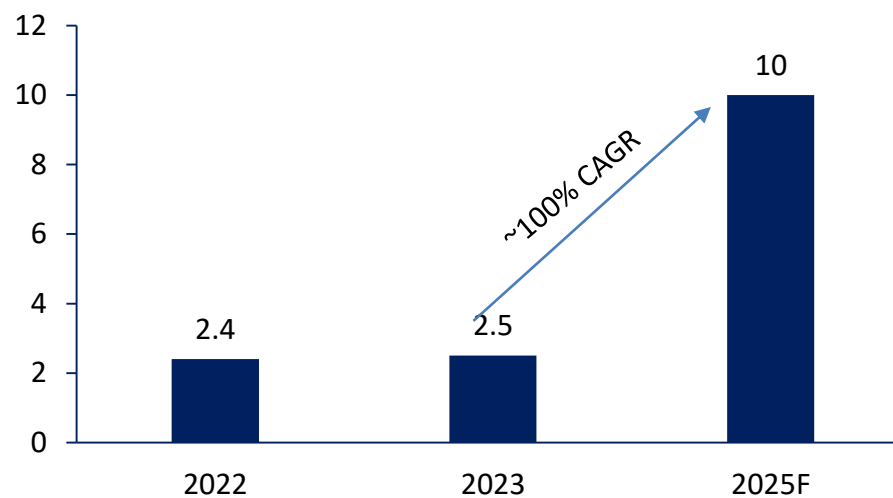
- India has a 75-80% import dependency on medical devices, with exports of US\$ 2.4 billion in FY22, which is expected to increase at a CAGR of 51% to reach US\$ 10 billion by 2025. To increase the export of medical devices in the country, the Ministry of Health and Family Welfare (MOHFW) and Central Drugs Standard Control Organization (CDSCO) implemented the following initiatives:
  - The entities are re-visiting and implementing the Schedule MIII, which is a draft guidance on good manufacturing practices and facility requirements.
  - System for export labelling.
  - Clinical evaluation and adverse reporting clarification.
  - State licensing authority to extend free sales certificate validity from 2 years to 5 years to allow exports.
  - Create a list of manufacturers with export licensing and make this list easily accessible to different regulatory authorities worldwide.
- The Medical Devices Virtual Expo 2021 showcased Indian products and enabled direct interaction between Indian suppliers and buyers/importers from participating countries. Also, 300 foreign buyers from the healthcare sector participated in this event.

Medical Devices Market in India (2022-2030, in US\$ billion)



Source: IBEF, CEBPL

Medical Devices Export Market in India (2022-25, in US\$ billion)



Source: IBEF, CEBPL



## Shareholding pattern (%)

Names	Mar-21	Sep-21	Mar-22	Sep-22	Mar-23	Jun-23	Sep-23	Dec-23
<b>Promoters -</b>	<b>58.80%</b>	<b>58.80%</b>	<b>58.80%</b>	<b>58.80%</b>	<b>58.80%</b>	<b>58.80%</b>	<b>58.80%</b>	<b>58.79%</b>
Apparao Venkata Mallavarapu	51.26	51.26	51.26	51.26	51.26	51.26	45.77	45.76
Tanya Mallavarapu							5.00	5.00
Nikhil Mallavarapu	4.58	4.58	4.58	4.58	4.58	4.58	5.07	5.07
Swarnalatha Mallavarapu	2.87	2.87	2.87	2.87	2.87	2.87	2.87	2.86
M S Swarnakumari	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
<b>FIIs -</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.05%</b>	<b>0.08%</b>	<b>0.11%</b>	<b>0.48%</b>	<b>0.38%</b>
<b>DIIs -</b>	<b>6.57%</b>	<b>5.89%</b>	<b>6.04%</b>	<b>6.82%</b>	<b>6.34%</b>	<b>7.66%</b>	<b>7.93%</b>	<b>7.25%</b>
Hdfc Trustee Co. Ltd. A/C Hdfc Dividend Yield Fund	6.56	5.89						
Hdfc Mutual Fund - Hdfc Multi Cap Fund				6.02				
Hdfc Trustee Company Limited - Hdfc Infrastructurefund			6.04					
Hdfc Trustee Company Limited - Hdfc Infrastructure					5.18	4.65	4.65	4.65
3P India Equity Fund 1						1.7	2.16	2.19
<b>Public -</b>	<b>34.63%</b>	<b>35.30%</b>	<b>35.16%</b>	<b>34.32%</b>	<b>34.78%</b>	<b>33.42%</b>	<b>32.78%</b>	<b>33.57%</b>
Shivani Tejas Trivedi	2.2	2.2	3.25	3.25	3.17	2.99		2.69
Girish Gulati (Huf)	3.12	2.62	1.76					
Ruchit Bharat Patel	2.25	2.25	2.55	2.55				
Minal Bharat Patel		2.35	1.6	1.6	3.36	2.69	2.11	2.11
Bharat Jayantilal Patel	1.51							
Zen Securities Limited -Clients (Dormant)							1.48	1.48
Zen Securities Limited		1.36	1.36	1.48	1.48	1.48		
Equity Intelligence India Private Limited						1.01	1.01	1.01

Source: Company, CEBPL

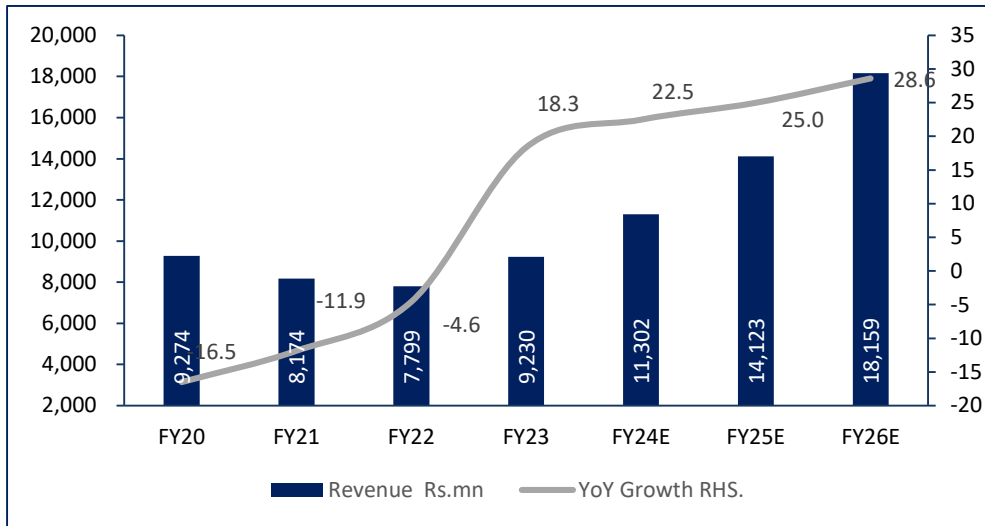
## Key Management Personnel's

Name and Designation	Brief description
<b>APPARAO V MALLAVARAPU</b> CHAIRMAN & MANAGING DIRECTOR	Apparao (Rao) V Mallavarapu founded Centum Electronics in the year 1993. Under his able leadership Centum has grown to become one of the largest electronics companies in India. He has initiated and successfully managed joint ventures with several MULTI-NATIONAL COMPANIES. Prior to founding Centum, he served at Wipro and Rao Insulating Company (RIC). Mr. Mallavarapu received his Bachelor's degree in Mechanical Engineering from Bangalore University and a Master's Degree in Mechanical Engineering from Daltech University in Canada. He was a recipient of the Ford foundation scholarship and Engineering research Scholarship toward his academic pursuits in Canada.
<b>NIKHIL MALLAVARAPU</b> WHOLE TIME DIRECTOR	Mr. Nikhil has been associated with the Centum Company since August 2012. He is currently serving as President Corporate Development and Strategy. Prior to this he has served in different leadership positions including Manager- New Projects at SEBU, Vice President – Corporate Development at Centum Adetel and most recently as President- EMS BU. Prior to joining Centum, Mr. Nikhil worked at the multinational semiconductor company- Analog Devices, as product engineer in the MEMS sensors division. Further, Mr. Nikhil completed his Masters and Bachelor's Degrees in Electrical and Computer Engineering from Carnegie Mellon University, USA. He also holds a MBA from the INSEAD Business School in France. Mr. Nikhil is the son of Mr. Apparao V Mallavarapu and Dr. Swarnalatha Mallavarapu.
<b>MANOJ NAGRATH</b> DIRECTOR	Manoj Nagrath is the Managing Partner of the firm S.P. Nagrath & Co., Chartered Accountants having its offices in New Delhi and Bangalore, and was enrolled as a member of the Institute of Chartered Accountants of India in 1983.
<b>PRANAV PATEL</b> DIRECTOR	Mr. Pranav is a well accomplished business leader, a thought leader and an early innovator. He is founder and CEO of MediTechSafe. Mr. Pranav held various executive leadership roles across multiple industries including Healthcare, Aviation, Energy, Batteries, Manufacturing & Automation Systems and Wireless / Semiconductor with fortune 500 companies like GE and Siemens. Pranav has co-authored six patents.  Mr. Pranav holds a bachelor's degree with honors in electrical engineering from the University of Illinois @ Urbana – Champaign, a master's degree in electrical and computer engineering and a second master's degree in industrial engineering from the Georgia Institute of Technology. He obtained his MBA degree from the Georgia State University.
<b>MS.TANYA MALLAVARAPU</b> DIRECTOR	Tanya is the founder of TMR Design Co. LLP Pvt. Ltd. an interdisciplinary design firm that emphasizes innovation, creativity, and functionality in a wide array of industries from healthcare, residential, commercial, and hospitality. Prior to this, Tanya served as a marketing executive in the luxury retail industry, involved in building marketing strategies for global retail expansion. She launched an Indian-based luxury brand across cities including New York, Hong Kong, London, and Delhi. Prior to this, she worked as a business analyst at Intuit creating revenue models and marketing strategies to launch the newly developed GoPayment product.  Tanya completed her Master's Degree in Economics from Duke University, in the U.S. She graduated from the University of Southern California with a Bachelor's Degree in Business Administration and was on the Dean's List. Tanya is married and lives with her husband in Chennai and has a daughter.
<b>P. THIRUVENGADAM</b> DIRECTOR	Thiruvengadam was a National Director of the Deloitte Touche Tohmatsu India Pvt. Ltd (DTTIPL) providing leadership to the HR transformation practice and has retired from the position recently. He has over 40 years of experience in management consultancy with a breadth of experience in India, the Middle and Far East Asia. Prior to his association with DTIPL, he served as a Director at Deloitte Haskins & Sells, Bangalore, India during 1999 – 2007 and as a Director at S.B. Billimoria & Co (now known as Deloitte Consulting) during 1980 to 1999. His main areas of expertise include Management Consulting, Business Process Improvement, Team Leadership, Strategic Planning, Business Strategy, Business Analysis, IT Strategy, HR Strategy, Talent Management, Account Management, Change Management, Quality Audit, Financial Audits, HR Audit, HR Transformation and Business Process Outsourcing Advisory Services; improving HR Service Delivery, Performance and Effectiveness; Systems Design and Organizational Structuring. Mr.P. Thiruvengadam is a Cost Accountant from The Institute of Cost Accountants of India and a graduate from Indian Institute of Technology, Madras with a B. Tech. He also holds a Post Graduate Diploma in Industrial Engineering from T.I.P.I.E, NPC. His activities and social interests are in Debating, Quizzing, Dramatics, Bridge and Shuttle Badminton.
<b>Kavitha Dutt Chitturi</b> DIRECTOR	Kavitha Dutt is a Business Management Graduate from Cedar Crest College, Allentown, Pennsylvania, USA and hails from a well-known industrial house in South India – The KCP Limited. She is currently the Joint Managing Director. KCP is involved in the manufacture of Cement, Heavy Industrial Machinery for Sugar plants, steel and sophisticated high tech equipment for Defence, Space & Nuclear Projects. KCP has presence in Power Generation. KCP also has a Joint Venture with Fives Cail of France, Fives Cail KCP Ltd., for design, procurement, project management, delivery and servicing of process plants for production of sugar including erection and commissioning. KCP operates a Sugar Plant in Vietnam for manufacture of Refined Sugar. KCP has now ventured into hospitality industry with a prestigious star hotel project at Hyderabad which was executed under Kavitha's stewardship. As Joint Managing Director of The KCP Limited, Kavitha, among other responsibilities, also holds full charge of Human Resource functions of the Group. She is Chairperson FICCI (Federation of Indian Chambers of Commerce & Industry), Tamil Nadu State Council. Kavitha, was Vice Chairperson of SCWEC, India. SCWEC is a Sub Sector Council of the SAARC Chamber of Commerce and Industry established with the objective of developing and promoting women entrepreneurs in the South Asian region. Earlier Kavitha was National President of FICCI-FLO, the ladies wing of Federation of Indian Chamber of Commerce and Industry, New Delhi during 2009-10. Kavitha, as the Joint Managing Director of The KCP Limited is in the forefront in administering all the educational institutions setup and being run by the group at all the regions that they operate. Kavitha is a Director on the boards of various prestigious corporations. An organizer par excellence, she has successfully incorporated and implemented a wide variety of programs and objectives for FLO, MMA, YPO, WTF and other institutions she has been associated with.
<b>RAJIV C MODY</b> DIRECTOR	Rajiv C Mody is the Chairman and Managing Director and founder of Sasken Communication Technologies Ltd. (Sasken). Over the last two decades, Sasken has grown into a major technology and solution provider to Tier 1 customers across the telecom value chain. Mr. Mody, a seasoned technocrat and an industry veteran has worked with corporations like AMD, Seattle Tech Inc., and VLSI Technology Inc., prior to founding Sasken. He was awarded the "Technovator of the Year 2007" by VOICE & DATA, a leading technology publication. He also served as an Executive Council Member of NASSCOM (2001 – 2008). Mr. Mody holds a Bachelor's Degree in Electrical Engineering from M.S. University of Baroda and Master's Degree in Computer Science from Polytechnic Institute of New York.

Source: Company, CEBPL

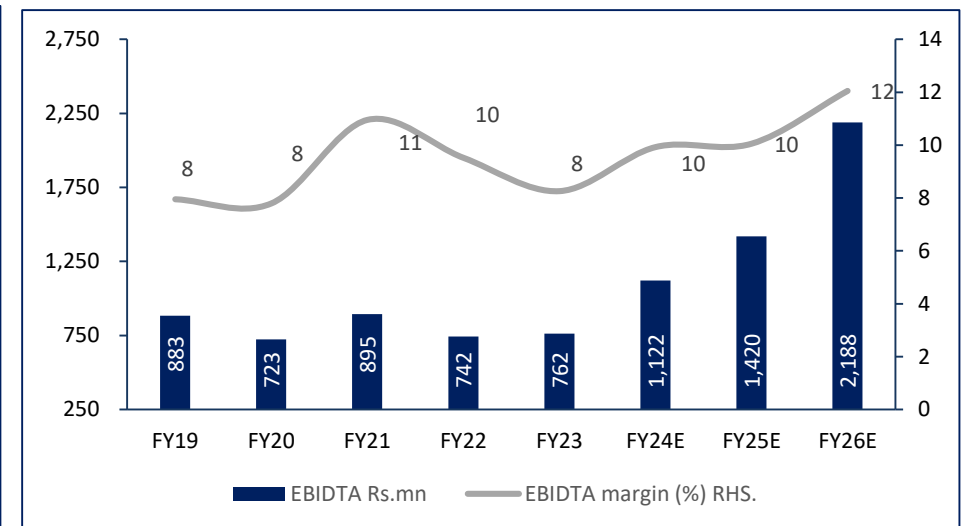
Story in charts

Healthy revenue growth supported strong order book



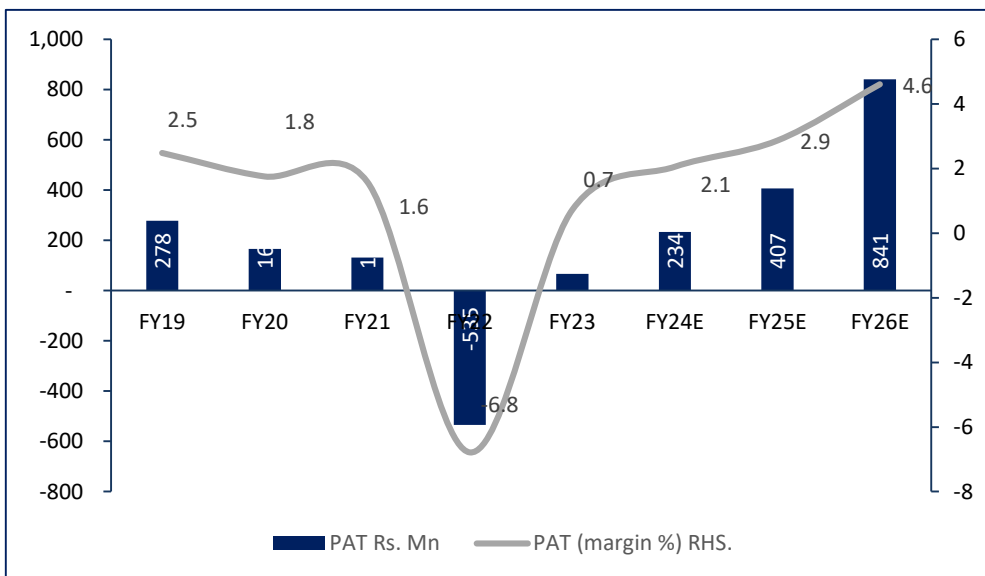
Source: Company, CEBPL

EBITDA Margin to rebound on cost control measures



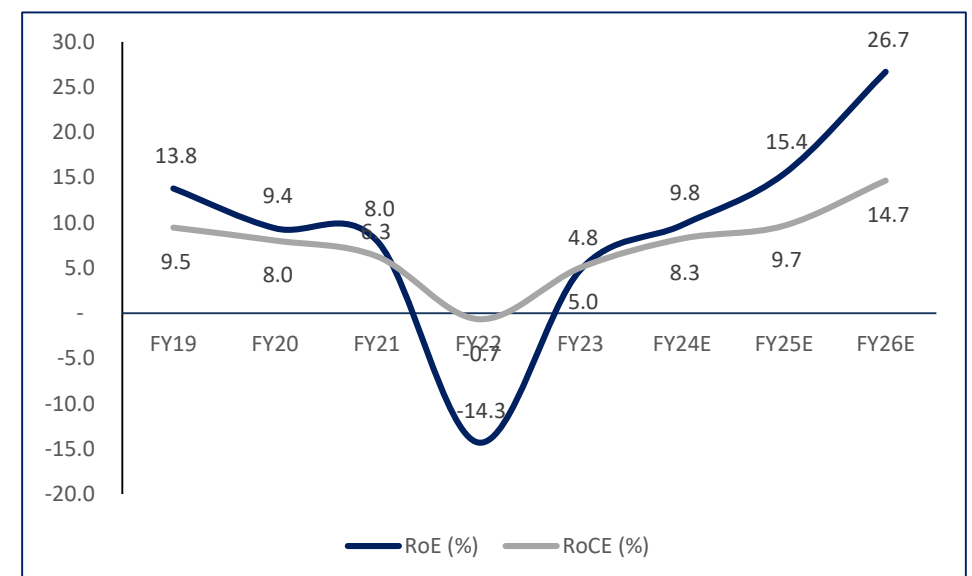
Source: Company, CEBPL

PAT (Rs. Mn.) and YoY (%) growth



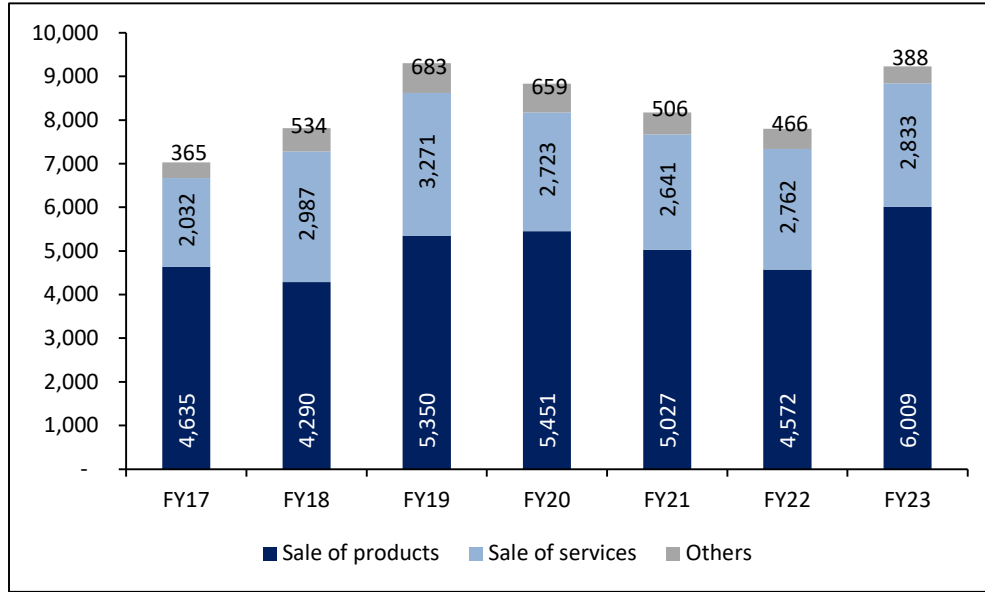
Source: Company, CEBPL

Improved RoAE and RoACE trend



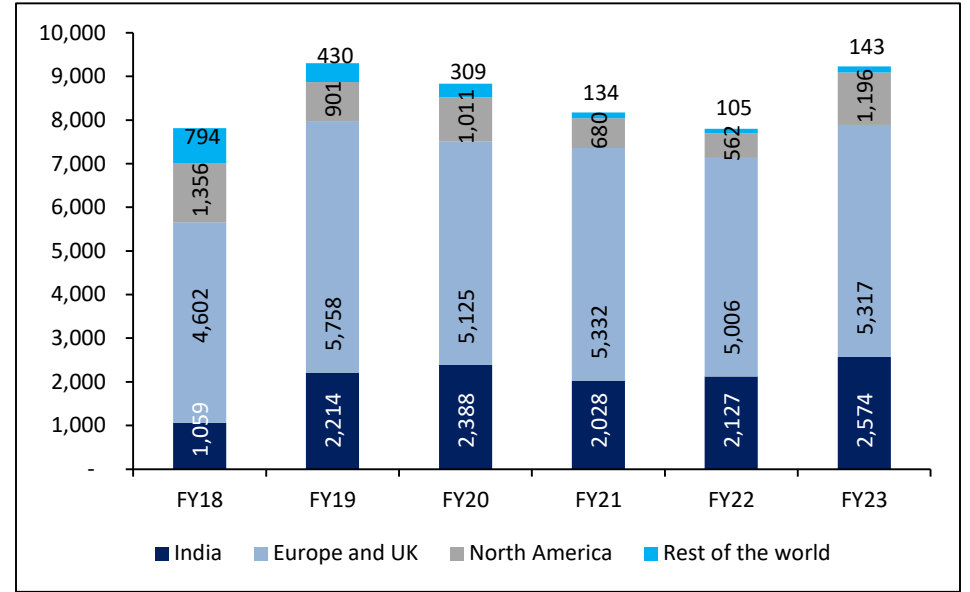
Source: Company, CEBPL

Revenue Mix



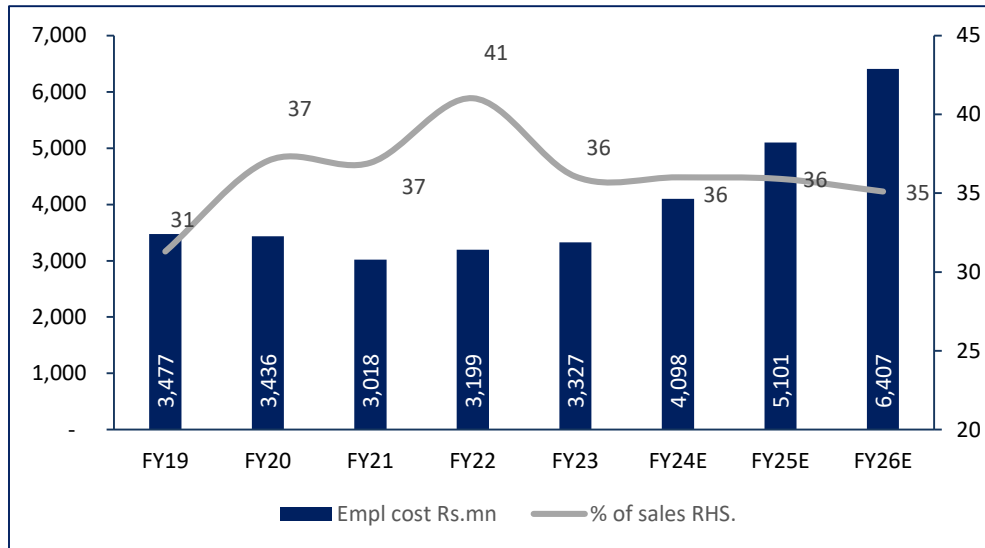
Source: Company, CEBPL

Geographical Mix



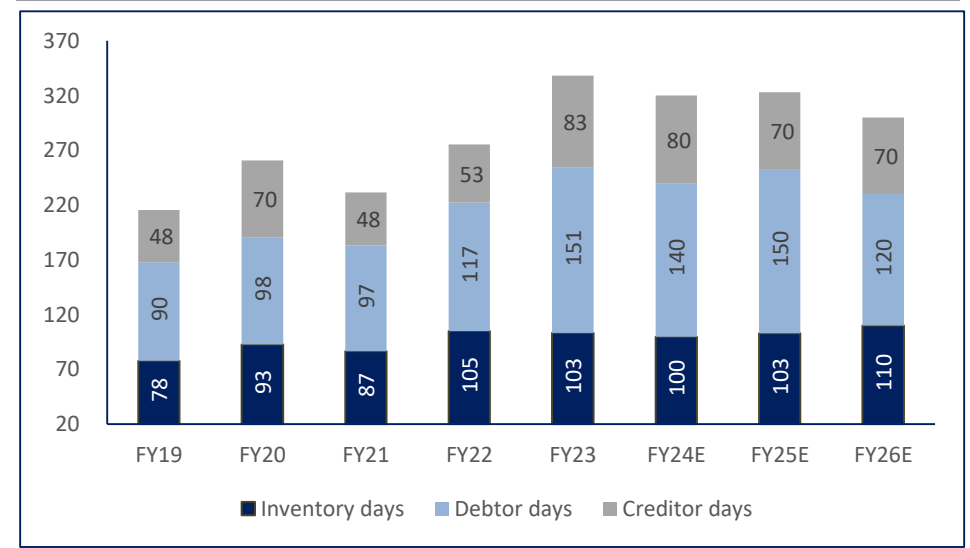
Source: Company, CEBPL

Reduction in Emp. Cost to drive the overall profitability



Source: Company, CEBPL

Working Capital Cycle



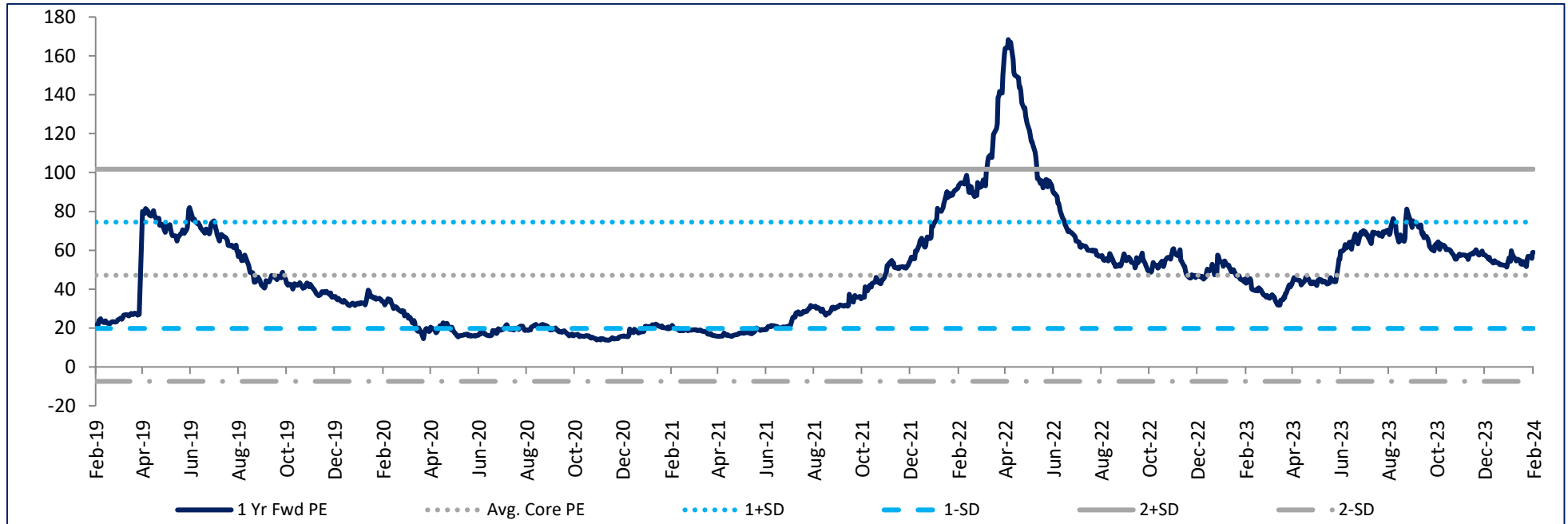
Source: Company, CEBPL

Centum Electronics Ltd (INR mn.)	FY22	FY23	FY24E	FY25E	FY26E
<b>Income Statement</b>					
Revenue	7,799	9,230	11,302	14,123	18,159
<b>Gross profit</b>	4,780	5,078	6,407	8,013	10,420
EBITDA	742	762	1,122	1,420	2,188
Depreciation	432	438	453	473	501
EBIT	311	324	668	946	1,687
Interest expense	263	273	383	397	467
Other Income	80	59	80	87	94
EO Items	(604)	-	-	-	-
<b>RPAT</b>	<b>(535)</b>	<b>67</b>	<b>234</b>	<b>407</b>	<b>841</b>
MI	(229)	(33)	20	30	40
Adjusted PAT	(305.4)	99.5	214	377	801
EPS	(23.7)	7.7	16.6	29.3	62.1
NOPAT	318	179	428	606	1,080
<b>Balance Sheet</b>					
Net worth	2,040	2,107	2,275	2,618	3,381
Minority Interest	-	-	-	-	-
Deferred tax	17	(43)	(43)	(43)	(43)
Total debt	2,401	2,310	3,195	3,454	3,890
Other liabilities & provisions	534	562	764	831	906
<b>Total Net Worth &amp; liabilities</b>	<b>4,991</b>	<b>4,936</b>	<b>6,191</b>	<b>6,861</b>	<b>8,134</b>
Net Fixed Assets	2,393	2,198	1,945	1,722	1,571
Capital Work in progress	0	54	300	150	200
Investments	73	96	113	141	545
Cash & bank balance	574	422	1,092	714	975
Loans & Advances & other assets	858	900	1,476	1,843	2,549
Net Current Assets	1,666	1,687	2,357	3,005	3,270
<b>Total Assets</b>	<b>4,991</b>	<b>4,936</b>	<b>6,191</b>	<b>6,861</b>	<b>8,134</b>
Capital Employed	4,440	4,417	5,470	6,072	7,271
Invested Capital	3,866	3,995	4,378	5,358	6,296
Net Debt	1,826	1,888	2,103	2,740	2,914
FCFF	844	491	676	294	1,784
<b>Cash Flows</b>					
Cash flows from Operations	1,035	709	1,121	394	2,184
Capex	(191)	(218)	(446)	(100)	(400)
FCF	844	491	676	294	1,784
Cash flows from Investing	(149)	(247)	(463)	(128)	(804)
Cash flows from Financing	(811)	(596)	450	(202)	(109)

Source: Company, CEBPL

Centum Electronics Limited	FY22	FY23	FY24E	FY25E	FY26E
<b>Growth Ratios</b>					
Revenue (%)	(4.6)	18.3	22.5	25.0	28.6
EBITDA (%)	(17.1)	2.6	47.2	26.6	54.1
PAT (%)	(278.0)	(132.6)	114.8	76.3	112.4
<b>Margin ratios</b>					
EBITDA margins (%)	9.5	8.3	9.9	10.1	12.0
PAT Margins (%)	(3.9)	1.1	1.9	2.7	4.4
<b>Performance ratios</b>					
OCF/EBITDA	1.4	0.9	1.0	0.3	1.0
OCF/IC	26.8	17.8	25.6	7.4	34.7
RoE (%)	(14.3)	4.8	9.8	15.4	26.7
ROCE (%)	6.5	7.3	13.5	16.4	25.3
<b>Turnover Ratio (Days)</b>					
Inventory	105	103	100	103	110
Debtors	117	151	140	150	120
Payables	53	83	80	70	70
Cash Conversion Cycle	51	50	41	59	46
<b>Financial Stability ratios</b>					
Net debt to Equity (x)	0.9	0.9	0.9	1.0	0.9
Net debt to EBITDA (x)	2.5	2.5	1.9	1.9	1.3
Interest Cover(x)	1.2	1.2	1.7	2.4	3.6
<b>Valuation metrics</b>					
Fully diluted shares (mn)	13	13	13	13	13
Price (INR)	1663	1663	1663	1663	1663
Market Cap (INR mn)	21,427	21,427	21,427	21,427	21,427
PE(x)	-70	215	100.2	56.8	26.8
EV (INR mn)	23,254	23,315	23,530	24,168	24,342
EV/EBITDA (x)	31	31	21	17	11
Book Value (INR/share)	158	164	177	203	262
Price to BV (x)	10.5	10.2	9.4	8.2	6.3
EV/OCF (x)	22	33	21	61	11

PE Band



3 Years Price Chart



Source: Company, CEBPL

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**CHOICE RATING DISTRIBUTION & METHODOLOGY**

<b>OUTPERFORM</b>	The security is expected to generate more than 15% returns over the next 12 months
<b>ADD</b>	The security is expected to generate greater than 5% to less than 15% returns over the next 12 months
<b>NEUTRAL</b>	The security expected to show downside or upside returns by 5% over the next 12 months
<b>REDUCE</b>	The security expected to show less than -5% to greater than -15% over the next 12 months
<b>UNDERPERFORM</b>	The security is expected to generate returns in excess of -15% over the next 12 months

**Disclaimer**

Research Disclaimer and Disclosure inter-alia as required under Securities and Exchange Board of India (Research Analysts) Regulations, 2014

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